# The Iron A

# A Review of the Hardware, Iron and Metal Trades.

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The Foundation and the Anvil of the 17-Ton Steam Hammer.

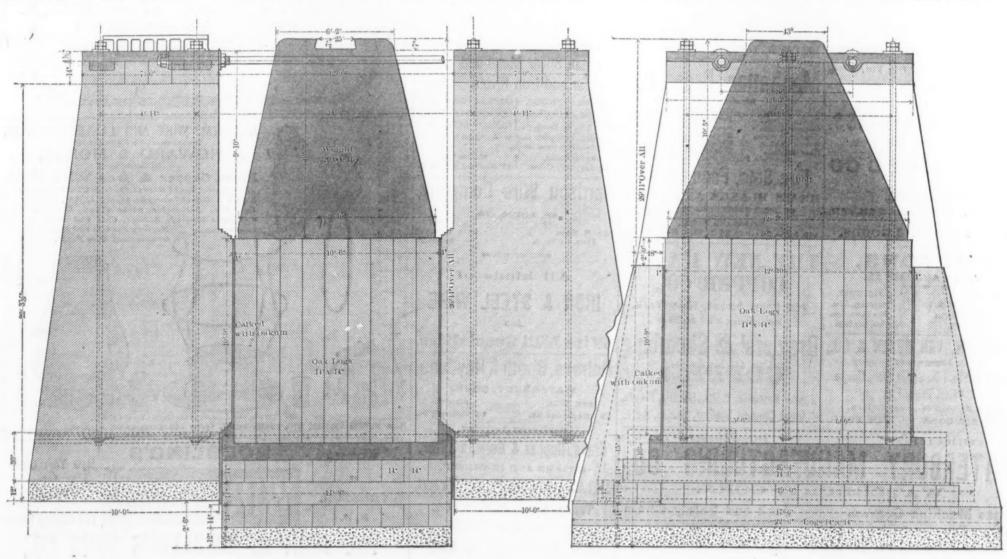
Not long since a brief note was published stating that the anvil for the 17-ton steam hammer now building at the Black Diamond Steel Works, had been successfully cast.

Steel Works, had been successfully cast. We are indebted to Messrs. Park, Brother & Co. for the accompanying illustrations, showing the details of the constructions, showing the details of the constructions of the stands of the constructions of the construction and the Anvil block is to be placed 11' x 13' 4''. These upright logs, to admit of narrow spaces to hold oakum boiled in coal tar, which is to be placed 11' x 13' 4''. These upright logs, to admit of narrow spaces to hold oakum boiled in coal tar, which is to hold oakum boiled in coal tar, which is to hold oakum boiled in coal tar, which is to hold oakum boiled in coal tar, which is to hold oakum boiled in coal tar, which is to hold oakum boiled in coal tar, which entered the cupolas through six 12 x 4-inch tuyere open ings in each cupola. The tuyere open ings were 24 inches above the bottom plates of the cupolas. The air chamber of each shout 30 tons. It was filled, and the metal tapped from it into the jarring of the anvil foundations of the cupolas. The air chamber of each shout 30 tons. It was of the cupolas. The air chamber of each shout on the parring of the anvil foundations of the cupolas. The air chamber of each shout 30 tons. It was of the cupolas. The air chamber of each shout on the parring of the cupolas through six 12 x 4-inch tuyere open ings were 24 inches above the bottom plates of the cupolas. The air chamber of each shout 30 tons. It was of the cupolas. The air chamber of each shout on the parring of the cupolas. The air chamber of each shout 30 tons. It was of the cupolas through six 12 x 4-inch tuyere open in seach cupola. The tuyere open in seach cupola. The supola 46.45.

Steel Works, had been successfully cast.

Steel Works, had been successfully cast.

Was real upon which the 160-ton anvil block is to hold



Figs. 1 and 2 .- Sections of the Foundation of the 17-Ton Steam Hammer.

tion of the foundation and the mold for the roundation and the moid for the anvil, together with data relating to the casting of the latter. We may add that we shall at an early date publish drawings of the steam hammer itself, which is now in course of construction at the works of Messrs. Wm. B. Bement & Son, Philadelphia. For the present we wish to delphia. For the present we wish to

delphia. For the present we wish to call attention to the method of making the foundation for this hammer.

The formation of the ground consists of an upper layer of yellow loam, underlaid to the rock with riverpacked gravel. The dimensions of the excavation in which the foundation is the foundation of the second the second to the secon dation is built was 30 x 50 feet, with a depth of 27 feet. After leveling the a depth of 27 feet. After leveling the gravel, 1¼ inches octagon steel bars about 8 feet in length, with drill points, were driven into the gravel from 4 to 6 feet in depth and about 8 inches apart. After drawing these bars the holes were filled with best Rosendale cement. This preparation was made in sections of small area, and before the cement had time to set and before the cement had time to set the sections were driven down as solid as possible with heavy iron ram-mers. After allowing time for the cement piles to set, a layer of concrete 12 inches in thickness, consist-ing of hard iron cinder, well moistened with water and cement, was laid down over the foundation. This course of concrete was well rammed before the cement began to harden. Upon this was placed a layer of 14" x 14" Monongehela square-sawed oak logs 22 feet in length, and a second layer of these logs, 11' x 8" long, was laid at right angles, extending 20 feet to receive a third layer of 20-foot length of same dimensions, running the same direction as the first or

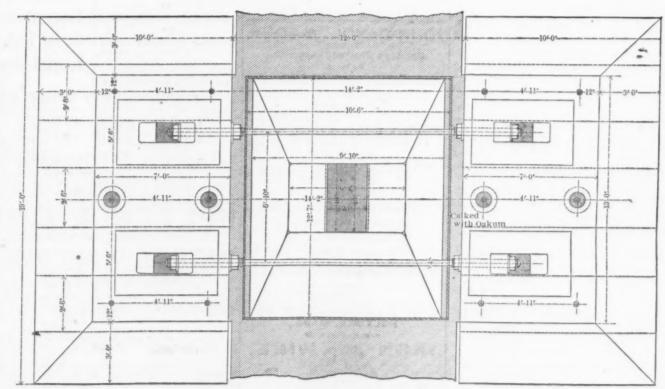


Fig. 3.-Plan of the Foundation.

THE FOUNDATION OF THE 17-TON STEAM HAMMER OF THE BLACK DIAMOND STEEL WORKS, PITTSBURGH, PA.

the same direction as the first or lower course. These logs were securely botted in every direction, tieing them firmly together. On top of these was them firmly together. On top of the stand of the foundations of some of their 12-them together. On the well was them firmly together

minutes from the time first metal was tapped into receiver until the 160-ton casting was completed.

As a precautionary measure, two

reservoirs, with spouts running from them to the anvil block mold, were provided (as shown in Fig. 5, p. 3), and the spouts were arranged so that in case the metal should chill in the gates the ends of the spouts could be opened, allowing the metal to feed in over the top of the mold, but it was not found necessary to use the second reservoir.

The interior dimensions of the mold (see Figs. 4 and 5, page 3) are, of course, the same as those of the anvil block. The mold is composed of fire-brick, heavily bound with iron and finished interiorally with a lining of loam and a final "facing" of black sand. As will be seen, special provision had been made to insure the quiet flow of the metal in the mold.

The plate iron rings (No. 8 gauge) used in the construction of the cupolas were tempered, bolted together, and will be utilized as casing for the two chimneys for 18 boilers now being added to the works for additional steam capacity.

It is proposed to strip the 160-ton

anvil block in one month after the time it is cast, and when cool enough, with the use of four of Richard Dudgeon's 60-ton hydraulic jacks, turn it over upon the foundation now waiting to receive it. The successful casting of this enor-

mous anvil block, one of the largest castings ever made in the country without explosion or accident of any kind, is a feat of which Messrs. Park Bro. & Co. may justly be proud. It was no easy task to find a competent and reliable molder who had the nerve

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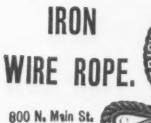
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Union Congress in Dublin, public attention week. The has again been directed to those vast industrial organizations which for so long a time further on. were looked upon with suspicion, if not with positive dread, as though they were little of the above societies was for out-of-work allowance. This feature of the trade setting than an organized and gigantic conpositive dread, as though they were little better than an organized and gigantic conspiracy against capital directly, and indirectly against society itself. In consequence of this feeling they were to all intents and nurposes regarded as illegal associations up to the year 1824, at which date the Combination Acts were repealed. But even then they had no legal protection for their funds. This protection was first ac-

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The latest tensor of twin do seen by the foregoing that the expenditure exceeded the income during the year by £173,203 3s. 3d. This is not to be wondered at considering the nature of their claims and the deplorable condition of trade English Trade Unions.

By the recent gathering of the Trades into Congress in Dublin, public attention as again been directed to those vast industrial organizations which for so long a time industries. The members' weekly contributions in the three societies first named are is. per week; in the last 9d. per week. The benefits paid vary somewhat in amount, but not materially, as will be seen further or the contributions of trades in these industries. The members' weekly contributions in the three societies first named are is.

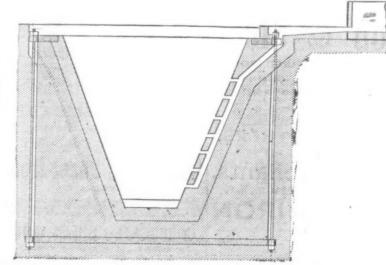


Fig. 4.-Section of Mold for Casting Steam Hammer Anvil.

corded to them by a temporary act in 1869, and afterward by the Trade Union Act, most the contributions are remitted while in 1871, the latter being subsequently amended in 1876, in which year also the full charter benefit alone during last year were: of their liberties was granted to them by the late government in what is known as the Labor Laws.

Many pesons were apprehensive, says the er, that these concessions would lead to all kinds of extravagant demands, and some feared that under the new laws intimidation and coercion would be more rife than ever. Happily nothing has since happened to justify those fears, and singularly enough the very contrary has taken place. The recognition of such associations by law wide for weekly during the whole of 1879

Weekly allowance, 57,510 18 0

as public institutions, seems to have shorn out of funds entirely subscribed by their them of their terrors, and to have stimulated selves and by their fellow workmen in the their development in the direction most desired. The aim of unionists of late years has been to extend the friendly society beneary age or nation. Here are four societies, fits of their union, rather than those appertaining to trades disputes or strikes. In this respect many trade societies are now among the very best of all the multitude of their own poor, and at the same time paying their quota toward among the very best of all the multitude of the poor's rate, during a period of depresfriendly societies with which this country sion in trade not often experienced in this

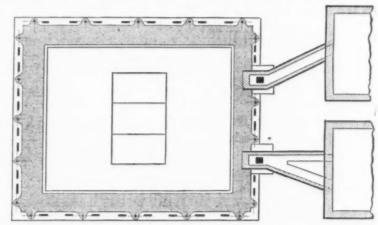


Fig. 5.—Plan of a Mold for Casting Steam Hammer Anvil.

abounds. While the weekly contributions country. This certainly is doing a good are extremely moderate, as compared with other societies, their scale of benefits is scarcely less commendable. superior to most. This phase of unionism is now, and will be in the future, their chief attraction. If they fail in this, their mis-

indeed, they are generally referred to as examples par excellence of such associations. They are the engineers, iron founders, boiler makers and iron shipbuilders, and steamengine makers.

The numerical strength of these four soieties is as follows:

Branches. Members.
Amalgamated Society of Engi-11,914 1879 : III er Makers and Iron Ship-

Total ....... 764 77.472 Fr.
These branches and members cover the Bo whole of the United Kingdom like a net-work, scarcely any town where their par-ticular trade is carried on being exempt from their operation and influence. The central offices of the two first are situate in London, the third in Liverpool, and the fourth in Manchester.
The net income and total expenditure of

these four societies for the past year were as follow:

Income. Expenditure. Amalgamated Society
of Engineers..... 133,267 10 1 245,826 11 10
Friendly Society of
Ironfounders..... 42,547 7 I 80,809 6 8
Boiler Makers and 

The amounts severally paid as sick benefit

26,514 17 2 6,260 17 5 2,295 6 6

Superannuation allowance is granted after a membership of a certain number of years' standing, and it differs somewhat in the various societies; the amounts vary also. In the two last the date at which this benefit was established was later than the two firet on the list : this will account for the smaller amounts paid during the year. The followaing sums were expended under this head in

Amalgamated Society of Eu- s. d. amount. £ s. d. gineers ciety of fron-founders 5 6 Boiler Makers and fron Ship-Builders 6 0 Steam Engine Makers...s/ to 9 3.727 4 9 Average..... 6 3 £23,907 15 2

Funeral allowance comes next in order. This benefit is one of the oldest forms of re lief in connection with the trade unions. It is, in fact, coeval with their existence, being founded by the old craft guilds, and continued to the present time. Last year the sums paid under this head were as follows:

2,160 0 0 Total .......... 8 6

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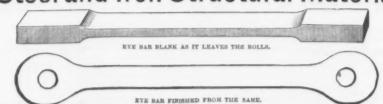
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the pressure on the funds has been increased in consequence of the prolonged depression in trade, for lack of employment means scarcity of food and other necessaries of life; the distress thus occasioned brings on sickness, and ultimately a larger proportion

The next item of expenditure-accident benefit—helped, no doubt, to intensify the demand for compensation in case of accidents, and led to the agitation for the Employers' Liability Bill, now passed into law.
Though the trades under review are not so liable to accidents as some others—as, for instance, miners, railway servants and the operatives in the building trades—yet that the amounts annually paid are considerable will be manifest from the following:

uilders..... 100 am Engine Makers..... 100 

four societies above named gave, in benevo-lent grants to distressed members, widows and orphans, the following sums, not exceeding £6 at any one time, to any member or widow :

Amalgamated Society of Engineers. 6,378 13 4
Friendly Society of Iron Founders... 70 10 0
Boiler Makers and Iron Shipbuilders 1,178 5 7
Steam Engine Makers... 212 40 0 The aggregate amount thus paid in one year by the four societies was £326,275. 10/2, as

the annexed summary will show Out of work and traveling.... Sick benefit.... Superannuation allowance.... Funeral allowance...

.....£326,257 10 3 The whole of this vast sum was expended for purely benevolent purposes, without reference to strikes or disputes. The value and importance of this simple fact is patent, and none will deny that its beneficial effects are immense. It will explain also, to a great extent, the reason why the unices are so powerful and their influence so vast. If they had no higher objects in view, or grander purposes to serve, than the maintenance of "trade privileges," "time-honored customs" and the like, they would speedily succumb to that great economical force, competition. Not that they would altogether cease to exist, for this is hardly possible under the present conditions of labor, but the motivo power which sustains them would spend itself in the fruitless attempts to regulate prices, without references.

ence to the law of supply and demand.

The foregoing epitome of the position, work and influence of these four large unions in the iron trade would not be complete if their expenditure under the head of strikes or discovering the configuration. strikes or disputes was omitted. The dis-bursements for trade purposes for the past

year are, therefore, furnished : Weekly Amounts. Amalgamated Society of Enriendly Society of Iron-founders... Boiler Makers and Iron Ship-builders.... Steam Engine Makers.....

....£53,123 12 7 Besides which grants were made to other trades, similarly circumstanced, amounting

Such is the history of the working of these four societies for one short year. The history of other societies among the iron and metal trades, such as the brassfounders, iron and steel workers, cutlers and the like, would point the same moral, only that their organizations are not so extensive or so complete, nor are their benefits equal to those given as examples in the foregoing sketch.

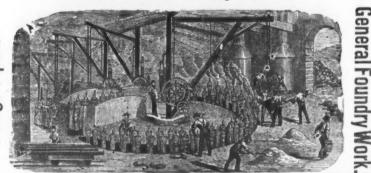
Testing the Tay Bridge,-Workmen Testing the Tay Bridge,—Workmen have begun to load one of the piers of the fellen part of the Tay Bridge, with the view to test its stability. The load is to consist of 1500 tons of rails. The weight of the iron pillars formerly on the pier was only 60 tons; and if the pier can support the great pressure now put on it, evidence will be afforded of its ability to carry the heavy superstructure of iron. ings are being made at various piers to show the nature of the strata in the bottom of the river, so that the engineer will know precisely the nature of the foundations he will have to deal with in preparing his plans. Workmen have begun to construct a guard round the temporary wooden pier which was put up to support the last standing girder on the north side, so as to protect it against the ice which comes down the river in the winter

An explosion, which might have been of a An explosion, which might have been of a serious nature, occurred recently at the Atlas Works, Sheffield, carried on by Messrs. John Brown & Co., Limited. It appears that from some unexplained cause the gas, which is carried in a tube from the generator to the Siemens furnace, became mixed with common air and an explosion occurred. with common air, and an explosion occurred with a loud report. The tubing was strong enough to resist the extreme pressure, but the ferce of the explosion threw down the stack upon which it was erected, and the tubing followed as a consequence. Fortunately, the furnaces had been let out to en-able repairs to be executed and the men had left their work; consequently, no one was injured.

The Cunard Line has concluded contracts for the construction of three powerful screw steamships for the transatlantic service, the largest of which is to be of steel, of 7000 tons and 8500 horse-power, to be called the Aurania. The other two will be of 5000 tons and 4500-These shoes are made of superior iron, completely finished and ready for cold sheeing; have clip and solid steel calk. The holes are numched through at the proper angles and free from burrs. Same number of Shoes per keg as in kegs of unfinished shoes.

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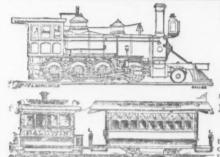
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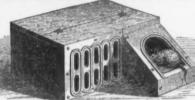




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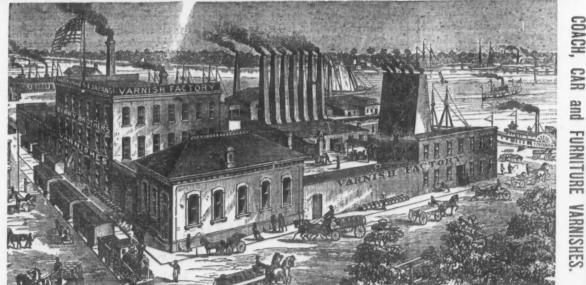
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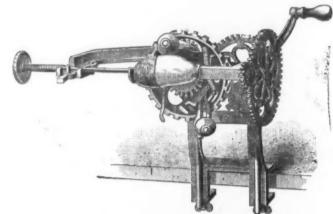
ASPHALTUM and Varnish Manufacturers, Detroit, Mich. CHICAGO BRANCH, s36 Lake st.; ST. LOUIS, 302 & 305 North Third st., CINCINNATI, 72 Main st.; ROCHESTER, 116 Front st.; BALTIMORE, 10 West Lombard st.; PHILADELPHIA, 57 North Front st.; BOSTON, 147 Lilk st.; NEW YORK, 250 Groads way.

### A New Potato Paring Machine.

chine—why was it not made before? The answer put forward by the manufacturers, who are Messrs. R. P. Scott & Co., No. 27 Orange street, Newark N. J., is as follows: A stationary knife will not pare a new ictato, as the loose skin folds over the knife; neither will it pare an old potato, because the skin is too tough, and it will not follow the irregularities of surface. A potato cuts so hard that so long a fork must be resed to hold it upon the machine that it spoils the potato. Further than this, no single knife will pare the whole surface of a flat or irreguwill pare the whole surface of a flat or irregular potato. Such, then, are the difficulties inadequate protection from the ravages of

the fact that iron pillars and joints are very susceptible to the influence of heat, and that The accompanying cut illustrates what is claimed by the manufacturers, and asserted by persons who have tried it, to be a successful potato parer. In this ago of mechanical ingenuity, when devices are perfected for performing almost all descriptions of manual labor, when apple parers are almost as common as pocket knives, the question naturally arises in the mind of any one whose attention is directed to this machine—why was it not made before? The answer put forward by the manufacturers, and asserted twist them to such an extent that the fall of the whole structure becomes a certainty. Iron will endure pressure and strain under ordinary circumstances, but will quickly succumb to the influence of heat. To guard against this and to place it in the front rank of materials used in construction, it is proposed, with reason, too, that in all buildings in which iron is a factor, it be encased in some non-conductor of heat. Terra-cotta has been suggested as the remedy. It may detract from the appearance, but that should a fire of small magnitude will soon warp and twist them to such an extent that the fall of detract from the appearance, but that should be subsidiary to safety. If iron can be ren-dered a salamander, it is certain to rise in favor, beccuse it possesses all the other desirable properties required in the construc-tion of buildings—lightness, strength and beauty.—Insurance World.

# Fire-Proof Iron Columns.



A NEW POTATO PARING MACHINE.

with which inventors have been obliged to contend. The present machine differs from most of its predecessors from the fact that it employs a rotary or draw-cut knife. Still a greater novelty in its construction is that it employs two of these in the set at different angles, by which combination all the more difficult obstacles attendant upon paring a potato are overcome. There are other minor improvements, such as the arrangement for supporting the outer end of the potato, &c., which tend to make the present machine very convenient and efficient. The rotary knives in this machine are set to so fine a cut that the waste of potato in the machine, as compared with hand work, is so much less that it is asserted a large restaules that it is asserted a large restaules. The rotary knives in this machine are set to so fine a cut that the waste of potato in the machine, as compared with hand work, is so much less that it is asserted a large restaules. The rotary knives in this machine are set to so fine a cut that the waste of potato in the machine, as compared with hand work, is so much less that it is asserted a large restaules. The rotary knives in this machine are set to so fine a cut that the waste of potato in the machine, as compared with hand work, is so much less that it is asserted a large restaules. The rotary knives in this machine are set to so fine a cut that the waste of potato in the machine, as compared with hand work, is so much less that it is asserted a large restaules. The rotary knives in this machine are set to so fine a cut that the waste of potato in the machine, as compared with hand work, is so much less that it is asserted a large restaules. The rotary knives in this machine are set to so fine a cut that the waste of potato in the machine, as compared with hand work, is so much less that it is asserted a large restaules. The rotary knives is united to the subject of rendering existing methods of construction in measurably fire-proof. Among the subject of rendering existing methods of construc

chine in a single day's use.

From a circular issued by the manufacturers, we are able to anticipate answers to one or two questions which may be raised.

mon iron pot in which water is being boiled; the under side of the pot in which the water is boiling may be pressed with the hand without fear of burning. Now, when heat and flame reach and surround a column filled with water, the water inside commences to heat, and as it heats it commences to circulate, heat, and as it heats it commences to circulate, so that, like the pot, the column can scarcely be made so hot that the hand could not touch it. As the water inside the column becomes heated it gives off steam, and, in order that this confined steam may not cause an explosion in the columns, a vent pipe is carried from the top of the upper column out through the roof, as shown by E in the engraving. This pipe also serves F, in the engraving. This pipe also serves another purpose, that in case the water level rises above the extreme hight of the columns, it can find an outlet through the pipe, and flow away on the roof without doing dam-

This system of protection to iron columns does not in any way alter the outside appearance of the columns to the eye. What ever diameter of column and whatever thickness of metal would be required upon other considerations, is still adhered to where this system is adopted. There is but little change in construction necessary. In a m dern store or warehouse, in each story a central line of columns supports the girders and floor beams. The columns stand one on top of the other, an iron plate intervening.
The only modification of construction re-The only modification of construction required is clearly shown in the engraving. At the bottom of each of the lower columns a hole is drilled and tapped, and into this is screwed a short piece of pipe. Connecting these branches a supply pipe is run, so that when the water enters this pipe it will simultaneously pass into the columns. The water rises from the inside of the basement column to the first story column. The water rises from the inside of the basement column to the first-story column, and so on upward. The shapes of the plates and the mode of connecting the columns together, as well as supplying the water to the columns and in passing the water from one column to another, can be accomplished in many ways. Such variation of details will occur to any architect, engineer or steam fitter, by which he will be enabled to adapt the construction according to requirements. to requirements.

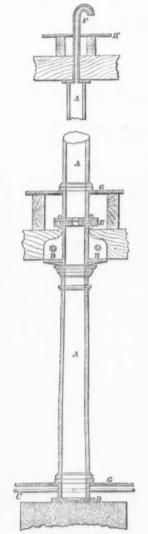
Referring to the engraving: A A are iron

columns, B B are brackets cast on the columns to support the usual wooden or iron girders and floor beams, C is a water-pipe,

D is the bottom plate of the column, E the connection between the columns, F is the vent-pipe at the roof, G G the floors.

This system of fire-proofing columns can be applied to existing buildings having solid intervening plates between the columns in be applied to existing oundings having sold intervening plates between the columns in different stories, by making the connection between the columns through an outside pipe passing around the plate. This invention is controlled by the Etna Iron Company, 104 Goerck street, New York, although we understand that Lemses are being granted to iron-founders, thus making it possible to obtain columns of this contruction in almost any part of the country without exorbitant charges in the way of transportation.

Rendering Iron Fire-Proof.—Iron, as is well known, is in some respects the very best material that can enter into the con-truction of a building, and in other respects it is the worst; of the latter phase we would respect to the latter phase and the latter phase respect to the latter phase respect to the l speak. It is hardly necessary to refer to girl was poisoned by eating American-



METTAM'S FIRE-PROOF IRON COLUMNS.

Those who have not observed the operation of the potato parer may suppose that two knives would conspire to waste the potato, but the fact is that the rotary knives employed in this machine are set to so fine a cut that the two parings put together are not so thick as that taken by one cut by the ordinary apple parers. The engraving conveys a fair idea of the machine. We have no doubt that our readers will comprehend its workings by examining the cut in connection with the above description.

# AUBURN FILE WORKS, Superior Hand-Cut FILES AND RASPS,

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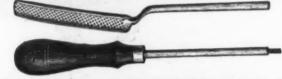


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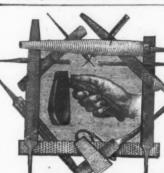


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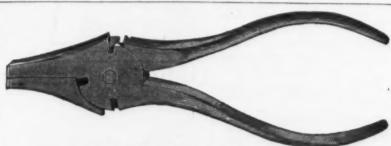
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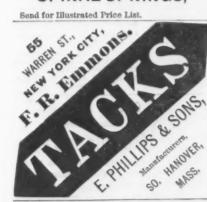
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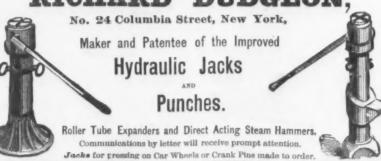
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canned corned beef, would quickly break up this trade, or at least do it, for a time, enormthis trade, or at least do it, for a time, enormous injury. Medical authority came to the conclusion that a portion of the tin of the can had been acted upon chemically by the juices of the meat, producing the deadly poison known as hydro-chloride of sinc. It was further conjectured that in the soldering of the cans spirits of salts were used. The incident should be him to reach first and the soldering of the cans spirits of salts were used.

# Pumping Rams.

Mr. Hett, an English engineer, whose name is well known in connection with pumping machinery on a small scale, hy-draulic rams and similar hydraulic ap-paratus, has recently brought out a "wheel pump," as he calls it, which is intended for use in all sorts of situations where streams

PHOTOGRAPHS OF THE NEBULA IN ORION During the night of September 30, 1880, I succeeded in photographing the bright part of the nebula in Orion in the vicinity of the trapezium. The photographs show the mottled appearance of this region distinctly. They were taken by the aid of a triple objective of trippes appearance made by Alvan They were taken by the aid of a triple objective of 11 inches aperture, made by Alvan Clark & Sons, and corrected especially for the purveyors of canned meat for the home market.

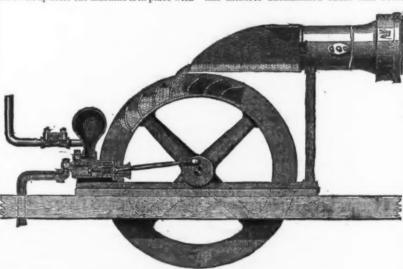
They were taken by the aid of a triple objective of 11 inches aperture, made by Alvan Clark & Sons, and corrected especially for the photographic rays. The equatorial stand and driving clock I constructed my self. The exposure was for 50 minutes. I intend at an early date to publish a detailed description of the negatives.

Prof. H. S. Munroe, of the Columbia School of Mines has made some interesting.

of Mines, has made some interesting researches on

a subject which is of vital importance to many of the mines of that region. The metal is distributed in the rocks of the Lake Superior deposits in the shape of metallic copper, the size and character of the are available, but where the water desired must be brought from another source. In fact, it is intended to take the place of the pumping ram of which we made mention in our articles on the hydraulic ram. Our illustration shows a side view of the new apparatus, with a section of the pump and partial section of the water wheel. The wheel is of the kind known as "over-shot."

The pump is a single-acting force pump, with both valves so arranged as to be easily reached by simply unscrewing a cap. The cup leathers, we believe, can be reached and screwed up after the machine is in place with-



SMALL POWER PUMP .- A SUBSTITUE FOR PUMPING RAMS.

out breaking joints. The wheel is 3 feet Munroo has directed his investigations in diameter and 1 foot broad. It is said to be sufficient to lift 1500 gallons of water 16 feet high in twenty-four hours. With a lower mined, to atmospheric influences has a tenwhich, it is said, were cast in three parts only, and yet were said to be of 16-foot face, are now at work supplying a large reservoir in the neighborhood of Lincoln, England. A cheap water wheel of this kind would, we think, be applicable in a great many situations in this country. The cost, if properly designed, would not be great, and they could be applied to the driving of any of our common horizontal pumps, like the Excelsior or Douglass Horizontal. As designed by Mr. Hett, the water wheel only requires a couple of planks or logs for a setting, with a suitable pent-stock to connect it with the dam. Such a wheel can be used in a great many situations where an ordinary pumping ram engine is inapplicable.

of the waste is due to this cause, is of vital importance. The saving of half the copper now lost would add largely to the profits of the mills, and would, with low prices of the mills, and would, we think, be applied to the driving of any of our common horizontal pumps, like the Excelsior or Duglass Horizontal. As designed by Mr. Hett, the water wheel only requires a couple of planks or logs for a setting, with a suitable part with the dam. Such a wheel can be used in a great many situations where an ordinary pumping rame engine is inapplicable. engine is inapplicable.

# SCIENTIFIC AND TECHNICAL.

tion of a method of blasting adopted in an English mine, which, it is claimed, does in each paper box, and 36 sets in the same paper box, and 36 sets in the same paper box, and a paper box, and 36 sets in the powder paper box, and a paper box, and 36 sets in the paper box, and a sale paper box, and 36 sets in the paper box and paper box, and 36 sets in the paper box and paper box and

feet high in twenty-four hours. With a lower or a higher lift the quantity of water, of course, will be proportionately greater or less. The wheel is of cast iron, made in a single piece and galvanized. The pump or pumps, for there are occasionally two where the supply of water to drive the wheel is large, are made from gun metal. Mr. Hett also builds a wheel of similar design, which is 10 feet in diameter. Two of these wheels, which, it is said, were cast in three parts only, and yet were said to be of 16-foot face, are

government for use in the mines of Japan. This machinery was an addition to a mill already running there, consisting of a battery, pans, settlers, retorts, shafting, &c., altogether about 100 tons, making a com-STOVE RESTS are designed to place under the feet of Stoves and Ranges, for the purpose of raising them from the floor or ang them from the floor or form. They are about %-thick, covered with sheet I in zinc, brass and nickel Highly polished and fin. Packed one set of 4 pieces h paper box, and 36 sets in case. Sizes (inside of circle b)

the greater portion of the gases and smoke the greater portion of nology are numerous and valuable.

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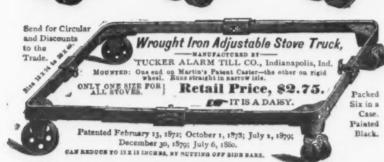
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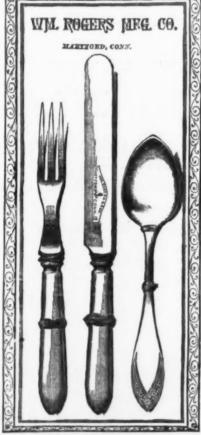
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THE GREENFIELD CO-OP. WORES,

#### The Pennsylvania Railroad Shops at an average stock of 10,000,000 feet of lum-Altoona.

A correspondent, writing from Altoona

out again, a few months later, as finished locomotives and cars to form the trains that bear to and fro across the mountains in a bear to and tro across the mountains in a single day thousands of passengers, and an aggregate value of merchandise larger than the most famous caravan routes of the Orient gave passage to in half a year. The iron-working shops do the work of building about 100 locomotives a year and of repairing about 250, besides making all the wheels and the blacksmithing and casting in iron and brass for the car-building shops. The loco-motives built here weigh from 20 to 40 tons each, the last being the weight of what are called the "consolidation" engines of the called the "consolidation" engines of the largest size, and built to draw the heaviest trains. These engines are provided with eight driving wheels, four on each side, and a pair of "leading" wheels in front. These driving wheels are 4 feet in diameter, and are bound by a steel tire, about 4 inches thick, which is shrunk or "chilled" on the cast-iron body of the wheel. The fast engines which draw the express trains are built more for speed than for hauling power, and for this reason they are provided with but four driving wheels, but of greatly increased diameter, the largest being 5 feet 8 inches. The wheel foundry is now turning out about 400 wheels a day for engines and cars, and for this work uses daily about 100 to 120 tons of pig iron. A steel-tired driving wheel of the "consolidation" size weighs from 1000 to 1100 pounds, and costs about to 120 tons of pig iron. A steel-tired driving wheel of the "consolidation" size weighs from 1000 to 1100 pounds, and costs about \$40. The larger, or fast, driving whee sweigh from 1300 to 1500 pounds, and cost about \$60 each. An ordinary car wheel costs from \$10 to \$12. About 35 engines per month are repaired in the shops, which includes anything up to the putting in of new fire-boxes, but the company very rarely puts in new boilers. When an engine gets into a condition to need a new boiler it is generally broken up. There is, however, a story affoat in the shops that the company never does actually build a new engine, but they can "repair" anything. There are so many patented rights about a first-class engine, if, indeed, the building of a locomotive at all is not an infringement of somebody's right, that the company would not dare to do it. This embarrassment, however, so the story goes, is overcome by the superintendent of motive power ordering an old bell or a number plate to be taken from the store-house and "repaired" by putting all the other parts of the engine under it. If the bell or the plate gets out of order or looks shabby after the engine has been on the road a few days, they then "repair" the engine by putting a new bell or plate on it. The locomotive-erecting shop is a building probably 200 feet in length and 60 feet in width. It is bridged by an enormous and powerful crane, capable of lifting and moving bodily a 50-ton locomotive. The crane has three movements, the first being the lift, and the other two the transverse and longitudinal motions. All of its motive power is derived movements, the first being the lift, and the other two the transverse and longitudinal motions. All of its motive power is derived from a fast-running endless hempen cord that moves at the rate of 5500 feet, or more than a mile, per minute. The exertion of its power is controlled by pressing this cord against a friction wheel, which puts in motion the running gear of the crane. With it a locomotive is picked up with a chain tackle and carried from one side, or one end, of the shop to the other in a few minutes. In this shop the engines, devoid of paint, polish or ornament, look like grim giants built for ponderous work, with their great bare musponderous work, with their great bare mus-cles and tendons of gray iron and steel. As cles and tendons of gray iron and steel. As soon as they are put together they are sent out over the road on a series of trial trips, under the charge of skillful and experienced engineers, and if the tests are satisfactory they are brought back to the paint shop, where the finishing touches of paint and varnish are put on. The "consolidation," or freight-hauling locomotives, are rather plain-looking structures, even after they are finished, the ironwork being merely covered with two coatings of black paint and iapanwith two coatings of black paint and japaning, to protect the metal against the oxidation and decomposition of the atmosphere. The speeding or express engines are more ornamental in finish, but, so far as power is

ber in their yards, in order that there may be no doubt about its being well seasoned. They make up into cars from 6,000,000 to 8,000,000 feet annually, consisting of white A correspondent, writing from Altoona, gives the following account of the Pennsylvania railroad shops at that place:

The machine and car shops cover some 40 acres in extent, and consist of an iron foundry, a wheel foundry, a brack smith's shop, a lathe shop, an engineerecting shop, and a car building shop, besides a chemical laboratory and physical testing department. The railway company haul into the yards of these shops thousands of tons of pig iron, steel and brass, and millions of feet of lumber, and sends them out again, a few months later, as finished. A passenger car is usually about to feet in length, and a freight car from 30 to 40 feet. The "sills" or body-sustaining timbers of a passenger car being longer, are made stronger and more numerous than those of stronger and more numerous than those of a freight car, in order to resist the deflection which might result from shock, and the iron stay bo!ts are of better quality. Every part of the car is made in these shops from the crude material, excepting only the plush and other textile fabrics which are used in the upholsterers' rooms. The squared lumber is hauled into the saw mill, and cut up by saws of every conceivable description into every shape and size necessary, and is then planed, bored, drilled, turned, warped, molded, bent and carved as required.

But perhaps one of the best evidences of

the care and prudent economy with which the service of the road is administered may be gathered from an outline of the work performed in the laboratory and physical testing department. The railroad company does not manufacture everything it uses, but it scrutinizes and analyzes all the supplies, which it purchases with great care. All of the steel and iron bought by the company, its lubricating and illuminating oils, its timber, and its paint and japanning varnishes are subjected to the closest tests before they are accepted for use. This practice results in saving money for the company, and conduces to the general safety of its traffic operations. Most of the steel used by the company, both in the form of rails and for engine and wheel making, is obtained from the Cambria Steel and Iron Works at Johnstown, about 35 miles further west on the line of the road. This steel is made by the Bessemer process, and every bloom of it is subjected to tests by the manufacturers. But with every rail or bloom of steel sold to the railroad company there is also a sample of the material sent for testing purposes, the sample and the lot being stamped in duplicate with the figures of the test results already obtained at the steel works. The railroad company then submits these to its own tests of tensile strength and clongation, and the result of every test is recorded. The quality of the steel is determined by the strain necessary to pull it apart, and by the percentage which it shows of stretching capacity or toughness. The pieces of steel tested are in bars having a square thickness of half an inch, and they usually withstand a pulling strain, applied be gathered from an outline of the work performed in the laboratory and physical square thickness of half an inch, and they usually withstand a pulling strain, applied by hydraulic power, of 24,000 to 30,000 pounds before they break. The elongation varies from 10 to 20 per cent. on the average. In like manner every part of the steel used which is to be subjected to wear, strain or shock is tested down to such small objects as crank-pins and stay-bolts. The pig iron used in the iron and wheel foundries is also used in the iron and wheel foundries is also tested chemically to determine the proportion of silicon, carbon, phosphorus, and manganese which it contains, because their relative quantities may and do materially affect the quality of the casting produced. For example, it is held that iron containing more than 1/2 per cent. of silicon will not chill, and for that reason iron containing more than that percentage of the mineral is not fit for use in the making of chilled iron wheels. These tests are made from borings of pig iron. Sometimes 80 tons of pig iron a day are used in the wheel foundry alone. The axle iron bought by the company is also submitted to bought by the company is also submitted to the test known as the breaking test before being accepted from the sellers. This consists in letting a weight of 1640 pounds fall on the bar, five times in succession, from a hight of 25 feet. Of course, it bends the iron, but its power to withstand shock and iron, but its power to withstand shock and strain is determined very closely. Another test to which steel is sometimes subjected is what is called the cold-bending process, in which a bar of the metal is bent close double by great pressure, to test its resistance and tensile power. All of these practical experiments result in the company's obtaining a known quality and value in goods for the money which they pay for the goods, thereby yielding them the fullest service in use, and assuring the greatest possible safety in the business of transportation. Indeed, so per-sistent is the company in this regard, that The speeding or express engines are more ornamental in finish, but, so far as power is concerned, the working locomotives could pull them to pieces. In the wheel foundry the only castings made are wheels, and in the iron foundry, as the other department is called, all the iron castings except wheels are made.

One of the very interesting branches of the work in metal is that carried on in the lathe or turning shop. Here may be seen at work over 20 different lathes, each engaged in planing off with mathematical precision the various rough cast parts of the machin-

does all tend to the securing of better service and greater immunity from accident.

Three or four years ago some of the mechanics in the Pennsylvania Railroad shops were overhauling an engine, and they found a peculiar irregular rut worn, or rather eaten, half an inch deep, several inches long and from one-quarter of an inch to an inch in width, into the steel of a steam chest. It was evidently the result of the action of some rapid and powerful corrosive, but its source was a mystery. For the oilplated with pure Silver. Our goods are all hand burnished, and are first-class in every respect. We pack our Spoons and Forks one dozen in each box.

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TABLE CUTLERY, BUTCHER KNIVES,

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THE GREENFIELD CO-OP, WORKS,
C. S. SHATTUCK,

THE GREENFIELD CO-OP, WORKS,
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Shop near by keeps up an unearthly din with the racket of its trip-hammers and the clanging of heavy bars of iron. There are in this shop to trip-hammers, the heaviest striking with a weight of 2500 pounds and the light-set 250 pounds. A large part of the work done here is the making of bolts, bars, clamps and other ironwork for car construction.

The car shops will turn out about 4000 new freight cars this year, and more than 100 new passenger cars. The company keep and unearthly din with the racket of its trip-hammers and the clanging of heavy bars of iron. There are in this shop to trip-hammers, the heaviest striking with a weight of 2500 pounds and the light-set 250 pounds. A large part of the work done here is the making of bolts, bars, clamps and other ironwork for car construction.

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The Saranac Nails are hammered hot and the finishing and pointing are done cold. Quality is fully guaranteed. For sale by all leading iron and hardware houses. S. P. BOWEN. President and Treasurer. PLATTSBURG, N. Y. J. W. LYNDE, Secretary.

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BRITISH BULL DOG REVOLVERS, 38, 44 and 45 Calibre.

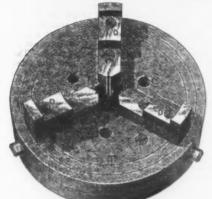
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# Union Manufacturing company.

Sole Manufacturers of

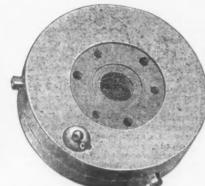
SKINNER'S PATENT COMBINATION CHUCK.

Universal, Independent and Eccentric.



ENGLISH

Fig. 1 .- Front View.





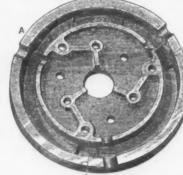
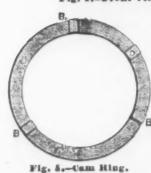




Fig. 7.-Patent Jaw.



We are determined that this Chuck shall be the best in the market. Believing that our customers do not want an inferior article, and with the improvements, as shown in the cuts, we have no hesitation in saying Ours is the Best Chuck Manufactured, and we Guarantee Every Chuck of this make perfect in every

All parts will be made interchangeable, and in case repairs become necessary, we can furnish the part needed without the chuck being returned to us, saving much time and expense, especially on Goods sold out of the country.

By sliding the Stud C (Fig. 2) the Chuck can instantly be changed from Universal to Independent, and vice versa.

Whenever, by use or from any cause, the faces of the jaws are found out of true, the several faces in the different jaws, which should be in the same plane, can be readily adjusted by screwing out the screws D D D (Fig. 1) until the projecting heads are in the same plane, at right angles to the axis. Please send for full descriptive circular and prices.

This Chuck is Universal, Independent and Eccentric, and was patented June 24 and November 18, 1879.

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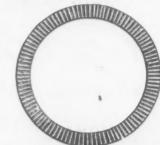


Fig. 6.-Circular Ruck.

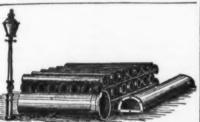


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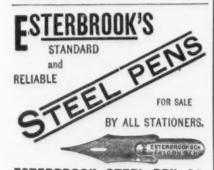


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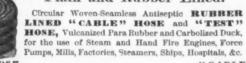


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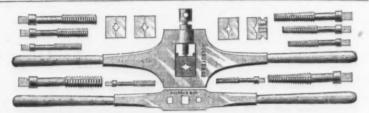
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This Hose is in use in over 300 Fire Departments; weighs but 58 pounds to the section of 50 feet; will stand a pressure of 400 pounds to the square inch; guaranteed for three years; will retain its strength for many years. We have many testimonials showus service for nine years, where the hose is in good condition for fire service. For sample and price, address

AKRON RUBBER WORKS, Akron, Ohio.

with stearic acid. The importance of the that the company uses on its 450 miles of main line, for lubricating purposes only, 150 of lubricating substances. The company have recently made some analyses of For illuminating purposes, the company require 200 barrels of lard oil and 125 barrels of kerosene oil per month in winter, and about 50 barrels per month less in summer, this amount being used in the headlights, in the signal lamps, and the lanterns carried by employees. These oils, and, in fact, every other article furnished for the supply of the road, are tested chemically or physically, and it is a rule of the management

analysis may be understood when it is known designated as the "Queen Anne" box. The that the company uses on its 450 miles of main line, for lubricating purposes only, 150 compliments the manufacturers on the artistic compliments the manufacturers on the artistic compliments. barrels of tallow, besides 225 barrels of well
oil, 100 barrels of lard oil and 100 barrels of
paraffine oil, making altogether 600 barrels
of lubricating substances. The company
age referred to (the time of Queen Anne) was a stranger to ornamental vessels for samples of graphite submitted to them for use as lubricators, but in many of them they have found from 7 to 12 per cent. of rock and other gritty substances, and have not yet concluded to discard the oily lubricators. was a stranger to ornamental vessels for sessels, it is quite consistent that the popular furniture of the present day should be supplemented by a coal box en suite, and the yet concluded to discard the oily lubricators. as may be seen by the engraving. This coal box, like others of its class, is mounted on casters, thus making what would otherwise be an unwieldy article one that is quite easy of transportation. A feature peculiar to this design is that, on raising the lid, it slips back out of sight under the platform. which forms the top of the box. This sur-face can be utilized for some suitable orna-ment to stand upon the design, and is such that the company is at all times open to re-ceive samples and proposals for the furnish-wood, in accordance with the furniture of

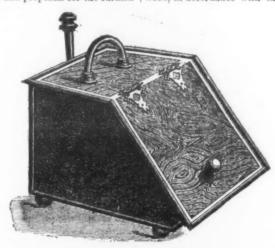


Fig. 1.—Box with Metal Frame.

ing of any supplies needed from any and all the room, while the side ornament may be manufacturers. As the chemist here remarked recently, "This testing department is here but for one purpose, and that is to save money and highten the efficiency of the Pennsylvania Railroad service," and in the main, by these attentions to details in every department, the management has wrought a Pennsylvania Railroad service," and in the main, by these attentions to details in every department, the management has wrought a grand success in railway administration. The same general care, prudence, economy, efficiency and energy are exercised over the whole 1900 miles of road owned, controlled, or operated by this great corporation, which penetrate and ramify the richest agricultural, mineral and manufacturing regions in the United States. All along its route villages are growing into towns, towns into cities, and every acre of land capable of producing anything of value on or from beneath consuls of vice consuls, while, in addition to these, Germany has 644 so-called merchant consuls or vice-consuls and 84 econsuls are in European countries, there being 73 in the United Kingdom alone—47 in England, 18 in Scotland and 8 in Ireland. One only of these, however—namely, the consul in London—belongs to the regular consuls in Sweden and Norway, the consuls in Sweden and Christiania belonging to the regular consular villages are growing into towns, towns into cities, and every acre of land capable of producing anything of value on or from beneath its surface is being used by industrious owners.

Norway, the consuls in Sweden and Christiania belonging to the regular consular service. After Sweden and Norway, Spain and Russia are most plentifully provided

New Designs in Coal Boxes.

A short time since, we showed a number of

with German consuls, there being 34 in each of the two countries. In the whole of France, on the other hand, Germany has only 17 consuls, the commercial intercourse between the two countries being at the A short time since, we showed a number of wooden coal boxes which, it appears, are quite popular in the English market, and suls are to be found in America than on any called the attention of our readers to the other continent, Asia, Africa and Australia



Fig. 2.-Queen Anne Box.

of anything of the kind being in the market. We herewith present two additional cuts, representing new goods just put upon the market in England. The first (Fig. 1) embodies an important improvement in construction over the ordinary wooden boxes which key and China, and, in Africa, in Egypt. have been common heretofore. It consists tion over the ordinary wooden boxes which have been common heretofore. It consists in the introduction of a metall icframe, which, while it does not alter the general contour of the box, leaves room for a variety of suggestions as to the details of the make-up. This frame may be made of iron finished in japan and ornamented with gold, for example, or brass or other metals may be employed. The advantages gained by the invention are claimed to be, in the first place, an increase of strength over an ordinary wooden box, while the construction admits the use of glass, tiles, japanned panels, fancy wood panels, or other features calculated to ornament the outside of the box. The illustration presented here with (Fig. 1) represents a box made with polished wood panels. We have no doubt that designs managed in this general way could be made very handsome, and we offer this account of what bids fair to be a popular article in England as a suggestion of the Germantown and Richmond tranches of the Holidvale Steel Works, at the intersection of the Germantown and Richmond tranches of the Philadelphia Exchange on October 20th. The sale was by virtue of a decree of the Court of Common Pleas No. 3, to satisfy the mortgage executed by Edward W. Clark and Clarence H. Clark, trustees. The works were projected in 1866 by William Butcher, Philip S. Justice, Samuel Huston and others, and was known as the William Butcher Steel Works. In 1872 a new organization was effected, and the name was changed to the Midvale Steel Works. The plant is one of the largest of the kind in the country, covering 8½ acres of ground. The auctioneer announced the terms of sale and called out for a bid, whereupon William Sellers bid \$450,000, and as there was no further inclination on the part of those present to go higher the sale was effected.

fact that, although good designs of this char- following in the order named. racter at a moderate price would be likely to be saleable in this country, we did not know consuls at New York, Chicago, Cincinnati, San Francisco and St. Louis belonging to the regular consular service. In Brazil there are also 17 consuls, but all of them belong to the merchant class. In Asia the largest number of consuls are found in Tur-

no doubt that designs managed in this general way could be made very handsome, and we offer this account of what bids fair to be a popular article in England as a suggestion to manufacturers on this side of the water.

accluded out for a bid, whereupon William Sellers bid \$450,000, and as there was no further inclination on the part of those present to go higher, the sale was effected in a second or two atthat figure. Mr. Sellers water.

Fig. 2 of our illustrations represents signed the book for himself "and others,"

# The Iron Age

# Metallurgical Review.

New York, Thursday, November 4, 1880.

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ublishers of The Ironmonger, 44 Cannon street,
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Within a fortnight two serious accidents have occurred to horse cars, which prove how dangerous some of the lines with steep grades in the vicinity of New York are. In the heavily-loaded cars rushed down hill with increasing velocity, until thrown off the track and wrecked. The recklessness run is really astonishing. Some years ago there was a line in the vicinity of New York on which the drivers were in the habit, during a portion of the winter months, of unhitching the horses and allowing the cars to run down the hill by themselves, regulating the speed, which was often excessive, by means of the brake. No serious accident ever happened, so far as we know, but a sharp turn at the foot of the hill was to the dictates of his own co always rounded with more or less trouble That route has now been abandoned and has been replaced by a large elevator, but there are still in close proximity to it lines using a grade as steep as the one referred to, and Connecticut at the Paris exhibition of 1878, declined, reaching only 5000 tons in 1878. on one of these the first accident happened. is one of the most interesting little publica-

lesson, and more powerful appliances for

### After the Election.

Now that the election is over, all classes of the people will breathe more freely, and business will quickly recover from the stag-nation which always attends the choice of a President. The result of the great contest is not much of a surprise to any one who has carefully studied the political situation without partisan prejudices so strong as to blind him to what other men could see clearly. No doubt it is a disappointment to many of our readers, but they may draw some consolation from the knowledge that the sun will continue to rise on time every morning, and that seed time and har vest will recur in their regular order. So long as this country remains in the hands of its people it is safe. Mistakes in party policy may temporarily disturb the prosperity of business or lead to grave apprehensions but we have confidence that the faith which every good citizen feels in the future of the republic will be vindicated, and that it is not in the power of a party to make or destroy our national prosperity. Nature has given us a wealth of resources which this generation cannot even develop. Half a century hence a wiser and more conservative policy will be necessary; now, we can expect to enjoy some measure of prosperity in spite of mistakes and unsuccessful experiments. It will strike every one as significant of

the temper of the American people that the election hinged on a question which had been relegated to a place of second impor-tance by the party leaders. Had the only issues before the country been those growing out of the war and the keeping alive of sectional animosities, it is probable, we think, that the election would have given a very different result from that which is shown by a count of the ballots cast on Tuesday. But the mistake of the Democratic party in reaffirming its opposition to protection, and its demand for such a revision of the tariff as should rob it of all benefit to the country save as a source of revenue to the National Treasury, turned the scale in favor of the party which proclaims a consistent faith in protection to domestic industry. The voter had his choice between the continuance of a policy known to insure conditions favorable to national prosperity, and an experiment in financial legislation fraught with danger, and, whether carried out in whole or in part, certain to paralyze for a time our national activities, disturb for years the course of business, make capital timid and force labor to content itself with such wages as could be earned in competition with the cheaper labor of Europe. people have weighed the question of a Protective Tariff vs. a Revenue Tariff, carefully and intelligently, and their decision is so emphatically and unmistakably pronounced that it will be some years before any party will dare inscribe on its banners a demand for a tariff for revenue only. Those who fancied that the cause of protection was lost and that the people of the country were ready for a change in the tariff policy, made a mistake of the most serious character. The cause of protection was never so strong as it is to-day, and the result of the election shows this more clearly than

anything else. There is no occasion for anyone to feel that the welfare of the country is menaced by the possible events of the next four years. It is inevitable that an election should disappoint a great many people, and that those who are disappointed should feel toward the majority as the man in the story felt toward the eleven obstinate jurymen who would not agree with him. But a glance at our history shows that the majority has not often made mistakes, and that whatever our personal views and preferences, we can safely trust the country in the hands of its people. The noise of brass bands and drums, smoke of torches and the sophistries of hoarse speakers do not greatly influence and nails, but in hardware and tools the inthe thoughtful citizen or change his convic-

In our last issue we commented unfavorably on many of the political manifestoes lately issued by employers and addressed to their workingmen. We are glad to see that we were not alone in our view of the matter, and that while many manufacturers refrained from any expression of opinion intended or calculated to influence the votes of their workmen, a few took occasion to assure their men that all they desired them to do was to vote as they thought best. both cases the brakes refused to work, and One of the most dignified of the latter class low quality of steel, fine quality not selling of notices was that posted last week in the buildings of the Katahdin Iron Company, at district produces about 8000 tons per annum, Bangor, Maine, and which we find pub- or 50,000 tons since 1874. Swedish Bessewith which many of these suburban cars are lished in a Bangor newspaper. We give it as follows

KATAHDIN IRON WORKS, Oct. 29, 1880.

To the Employees of the Katahdin Co.: I take the occasion to say that of vastly more importance, in my judgment, than the election of either Garfield or Hancock, is the question of the free and untrammeled expression of the will of overy voter.

In accordance with this belief, I wish it understood that every man employed at these works shall consider himself perfectly free to cast his vote, absolutely without fear or favor, according

O. W. DAVIS, JR., Treasurer.

The report of Prof. Wm. P. Blake, of New Haven, on exhibits from the State of tons of steel, since when it has steadily

checking the speed of cars on such lines should be generally introduced.

Paris, and it is possible, even in a pamphit was only 2000 tons, reaching 40,000 tons the moral support, at least, of all other in 1878. Copper production, on the other maritime nations. The result is a report which, if covering only a very small part of our division | Coal increased in production about fourof the exhibition, is very thorough and ex- fold between 1860 and 1878. act, and possesses great interest for the exhibitors to whom it is addressed and for whose benefit it was published. The eximitation.

#### Swedish Iron Production.

The Stockholm Aftonblad gives some valuable statistics having reference to Swedish iron production, which will probably interest our readers. From the tables given it appears that the production of iron ore increased from 224,000 tons in 1833 to 455,000 tons in 1860, and in 1878 reached 680,000 tons; the greatest output was in 1874, when it reached 933,000 tons; the total between 1833 and 1878, inclusive, being 22,000,000 tons, of which 12,000,000 tons were between 1860 and The export to England has proved unprofitable. The 16,000 tons annually exported, on an average, since 1864 have nearly all gone to Finland.

Pig iron production, which as early as 1833 attained 113,000 tons, increased comparatively little up to 1860, when it was 182,000 tons. Since then it has developed as

TOHOWB.				
Tons.		Tons.		Tons.
1861 167,000	1867	351,000	1873	343.000
1863 196,000	т868	201,000	1874	326,000
1863 184,000	1869	288,000	1875	348,000
1864 238,000	1870	297,000	1876	348,000
1865 224,000	1871	295,000	1877	366,000
v866 933,000	7872	338,000	3898	337,000

Between 1833 and 1859 some 4,100,000 tons were produced, and adding thereto the output from 1860 to 1878, we arrive at a total of 9,333,000 tons. England's pig iron production from 1860 to 1878 amounted in the aggregate to 116,500,000 tons, of which 4,000,000 were produced in 1860 and 6,500,000 in 1878; consequently the English pig iron production increased from 1860 to 1878 about 61 per cent., and Sweden's 85 per cent. In England the maximum-6,900,000 tons was reached in 1872; in Sweden in 1876. The difference between minimum and maximum production was, in England, 11 per cent.; in Prussia, 19 per cent., and in Swe den only 60 per cent. The export of Swedish pig iron hardly began previous to 1860. In 1860 the export was 10,000 tons, thence it increased about 200 per cent., and reached its maximum in 1872, when it was 80,000 tons. Meanwhile the import of pig iron into Sweden increased 700 per cent. Cast-iron production about doubled between 1860 and 1878. While the export increased, the import of cast-iron goods decreased in about

the same ratio. Early in the present century Russia and Sweden were about the only nations exporting merchant iron. While iron production increased between 1860 and 1877 only 17 per cent. in the former country, the merchant iron output in Sweden has been steadily on the increase, something like 45 per cent. between 1860 and 1878. During this latter period the aggregate production has been 3,300,000 tons, being 765,000 tens in excess of the output of the period 1833-59, the maximum export being in 1871, when it was 145,000 tons. Between 1860 and 1871 there was a steady increase of exportation, which then declined to 1878, when it was 100,000 tons, about as much as in 1860. While Sweden's export has not increased, her import, on the contrary, has risen some 200 per cent. since 1860, being 3500 tons in 1872. Swedish iron, being made with charcoal, is dear, but of a special quality, used for finer manufactures; she therefore imports a common quality for or-

dinary purposes. The production of manufactures of iron has increased about 75 to 80 per cent.. This is comparatively little, considering the large development elsewhere. Statistics ased production of sheet iron crease has been insignificant. There has, on the other hand, been a large and increasing importation of hardware, tools, machinery, steam engines and boilers.

Steel production has been looking up steadily in Sweden, although slowly. In 1861 it did not exceed 7000 tons, of which 1000 tons which 20,0000 tons were Bessemer. The aggregate between 1861 and 1878 Was 232,000 tons, of which 161,000 were Bessemer. Up to 1878 there have been erected in Sweden about 25 Bessemer works, most of which produce a readily. The largest work in the Gefleborg mer steel is too dear for rails, hence the latter have not attained much importance among us in the way of production. The largest steel rolling mill in Sweden went into operation in 1870, since when the aggregate of steel rails rolled in Sweden has not exceeded 16,000 tons. While in the aggregate Sweden exported but 5000 tons in all this time, she imported 410,000 tons.

Martin steel production commenced in 1874, but up to and including 1878 not more than 7000 tons were produced; it has since increased, and in 1878 amounted to 2500 tons. In 1860 Sweden exported about 7000

With respect to other mineral productions, These accidents should serve as a severe tions we have received in a long time. There it should be mentioned that zinc ore has been ever. At any rate the Spaniards are try- cate and to recoup the country for money

hand, has of late years been declining.

On taking a general view of what has export of iron in general has increased since 1860 in the same ratio as that of England, viz., about 60 per cent. There is, on the whole, a steady, solid progress notice-

#### An Industrial and Commercial Revival in Spain.

the second rebellion in Cuba has been desired at present. successfully overcome. At the same time Spain has been favored with a good wine crop, and France has taken the thoughtful attention of the American the bulk of it at very handsome prices, in consequence of her own unfortunate deficiency. The mineral re- effectively. Replanting has not been undersources of Spain have also been developed taken on anything like an extensive scale, very materially since the last Carlist rising. and probably it will not be until timber and Spain produces lead, quicksilver, calamine and valuable iron ore in abundance, and is make it more profitable to use land for in a fair way to become, next to Chili and growing trees than in raising farm pro-Lake Superior, the greatest copper producer in the world. Spain's production of fruit is the subject consideration, nor too soon to coming more considerable year after year, and the manufactories of cotton, &c., in Catalonia are in a flourishing condition.

The elasticity and buoyancy of the Spanish character are brought into full play under such circumstances. Confidence revives, and Spain, if politics do not crop out again, is, after many trials and obstacles which seemed insurmountable, but since have been successfully overcome by perseverance, once more on the high read to a prosperous future. In view of these facts, it is by no means surprising that a serious attempt should be made by the leading financiers of Spain to convert, on an equitable basis, the large outstanding national debt, amounting to no less than \$2,000,000,000 of our money Peninsular papers are now eagerly discussing the various methods of conversion proposed all seemingly acceptable to the bondholders; but to go into the details would lead us too far. At any rate, it is highly creditable to the Spanish character that steps should be taken to pave the way, if possible, for a regeneration of the national finances, with a view to meeting the liabilities of the country, from the moment the future begins to

A few figures will show how the Spanish foreign trade movement has expanded, in spite of the Carlist war and two great insur-

ections in Cu	Bur THO	nRerres are	in irancs;
	Import. Average.	Export. Average.	Total trade.
850 to 1854	177,500,000	180,000,000	375,500,000
863 to 1870	403,750,000	305,500,000	709,250,000
875 to 1877	412,000,000	414,000,000	820,000,000
879, 1st 6 m'ths.	240,776,997	209,449,610	
380 " "	246, 182, 354	283,602,488	

The excess of nearly 80,000,000 francs in the exportation of the first half year of 1880 will be noticed.

MARITIME MOVEMENT, TONS. Spanish Flag. For. Flag. 850,000 850,000 1870 to 1874 1 1,230,000 2,300,000 TONNAGE OF SPANISH MERCHANT NAVY. Sailing Vessels. Steamers. Total 460,000 340,000 635,000

Produced in Rials of 5 Cents of our Money, each in Millions. | Year | When | Income-| Imposed, Imposed, 1850. . . . . 1577 | 93 | . . . . 1600 | z | . . 160 1879. 63 Salt tax .... Stamp tax.

INCOME OF THE NATION.

1772 consump-289 1,109 an income in our money of \$120,000,000,

were Bessemer; in 1878 it was 26,000 tons, of and this income has more than doubled during a period of thirty years. Considering must be confessed that she has shown an years. The syndicate will control the comextraordinary degree of vitality, leading to the very best expectations for the immediate future. With the revival we have just traced in

outline the national pride naturally also that the syndicate shall make no pooling awakens once more. The peaceful recovery traffic or other arrangements with American of Gibraltar is, therefore, a favorite subject of agitation again, much to the distaste of our English neighbors, who, since the open- Parliament. ing of the Suez Canal, cling to the lone rock opposite the African shore with greater obstinacy than ever. The Spaniards, as is syndicate is concerned. To make good his but natural, begin to get tired of this smugglers' nest on Iberian soil, nor do they like to end without asking the people or governmuch the wide range modern artillery which the English are mounting there.

Whether this agitation will lead to some result and eventually cause the evacuation Great Britain will, with good grace, quit the road is building. At \$2 hn acre—and it such an important post, the key to the Mediis believed the land will bring much more— Eastern question looks as threatening as cient to pay the cash subsidy to the syndi-

were fifty-eight Connecticut exhibits at steadily increasing in its output, for in 1860 ing their best to push this matter, sure of

#### Forestry.

Elsewhere we print some matter of imbeen accomplished in Sweden, it may be portance to those interested in the subject said that, in spite of the late dull times, there of forestry. The inquires sent out by the ample of Connecticut in this matter may has been less fluctuation in general produc- Department of Agriculture relating to the properly be commended to other States for tion than in England and Prussia, while the prevention of forest fires and the dying-off of spruce timber, should call out an immediate response and bring together much valuable information. Especial interest however, attaches to the memorial to the governors and legislatures of the several States, outlining such action as is needed to prevent the destruction of our forests from preventible causes. This memorial was adopted by the American Association for the The gradual advance in quotations of Advancement of Science, and is sent out the Spanish foreign debt from 16 to 27 this with the approval of Prof. F. B. Hough year, in which speculation seems to have and the Bureau of Agriculture. This memhad no share, evidently shows that some orial seems to cover the ground very fully, remarkable material progress is going on in and a comprehensive enactment embodying the Peninsula, and this is certainly the all its suggestions would give a State as case. Spain begins to breathe freer since good a code of forestry laws as need be

> The problem of forest conservation is one which has scarcely forced itself, as yet, on lumber shall be worth a price which will ducts. It is not too soon, however, to give pass laws intended for the encouragement of tree planting and the protection of those already growing from the dangers which menace them. The great danger to be guarded against is wanton or careless forest fires. Conflagration annually consumes forests of immense value, and destroys the recuperative powers of nature by blighting the young saplings and killing old roots from which new trees would spring. The National Association of Charcoal Iron Workers have manifested an intelligent interest on this subject, and it is to be hoped they will take the initiation in a movement which promises so much benefit to them and to all classes of the people.

### The Canadian Pacific Railway.

Advices from Ottawa, under date of No-

rember 2, report that the Dominion government has concluded negotiations with the Pacific Railway syndicate, and it is said that Parliament will meet the first Thursday in December to ratify the agreement. One division of the syndicate is said to be composed of Canadian capitalists, headed by Mr. Geo. Stephen, president of the Bank of Montreal. With him are associated Mr. Angus, general manager of the St. Paul and Pacific Railroad, Hon. James Cochran, of Quebec, and Mr. McIntyre, of Montreal. There are others whose names are not known. In England the syndicate is represented by Morton, Rose & Co., financial agents of the Dominion, and in New York by Morton, Bliss & Co. The French division is composed of Reinach & Co., of Paris and Frankfort, and the Société-Générale. The syndicate will have a paid-up capital of \$50,000,000. Of this sum the Société-Générale subscribes one-half, £5,000,000 sterling; the Canadian capitalists one fourth, or \$12,500,000, and Morton, Rose & Co. with Morton, Bliss & Co. and Reinach & Co. the remaining fourth. A guarantee of \$1,000,000 will be deposited with the government, to be forfeited should the syndicate fail in its contract. The government hand over to the syndicate the sections of the road already completed or in course of construction, the value of which, including the surveys, &c., is put down at \$30,000,000, and give them a cash subsidy of \$25,000,000 a land grant of 25,000,000 acres. The land is valued at \$2 per acre, so that the gross subsidy, with the completed sections, represents the sum of \$105,000,000. The road is to be completed in ten years from Lake Nipissing, its eastern terminus, to Buzzard The latter figure, it will be seen, represents | Inlet, on the Pacific Coast; but there is a special proviso that the prairie section, roughly speaking, 1000 miles in length, from Manitoba to the Rocky Mountains, shall be what Spain has gone through since 1867, it finished, equipped and running within three pleted sections, run them, and be responsible for the running expenses until the completion of the road in 1891, when the government will take possession. It is provided roads without the consent of the government, subject to ratification by the Dominion

These are said to be the main features of boast that the road would be built from end ment of Canada for a dollar, Sir John A. Macdonald has the following plan: The government will reserve 25,000,000 acres in blocks, alternating with those granted to of the fortress by the English remains to be the syndicate, and this land will be thrown seen; it is at best highly doubtful that upon the market as the prairie section of terranean and the East, at a time when the this will give him \$50,000,000, a sum suffier, sure of all other

. 1880.

er of imhe subject ut by the ng to the dying-off her much interest ial to the ne several needed to ests from l was adon for the sent out B. Hough his memery fully, mbodying State as

need be ion is one as yet, on American stion has pidly and en underive scale mber and hich will land for arm pror, to give soon to ragement of those rs which elese forconsumes troys the y blight-old roots ng. The

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,000,000 fourth. & Co., nach & ntee of he govndicate t hand he road nstruche suro, and he land gross repre-Lake

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already spent on the undertaking. It will be seen that the success of the whole scheme turns on the ability of the government and the syndicate to dispose of the lands to set-tlers. This year the emigration to Manitoba and the Northwest falls nearly 50 per cent. below Sir John Macdonald's estimate of last session; but the members of the syndicate say they will establish agencies in every corner of Great Britain, and that Reinach & Co. will look after emigration from Germany. We have no doubt that the effort to attract immigration will be measurably successful, but to keep it when once secured will be a matter of no little difficulty. No district of the American Continent has been more overrated than the Northwest country. It is a good wheat district, but no better than can be found south of the line. The winters are terrible, and European immigrants who do not at once buy land and permanently locate are little disposed to brave the rigors of a second season. Of late the immigration from Canada to the United States has ranged from 13,000 to 16,000 per month. This does not include those who merely enter the United States through Canadian ports, but is limited to immigrants who have lived long enough in the country to be classed as Canadians. The time will come when this Northwestern country will be needed for settlement, but to fill it with population at present will be as difficult as to carry water in a sieve. No doubt the members of the syndicate see their way to a profit in building the road; but it is a doubtful undertaking at best, and may prove a white elephant on the hands of the

The German government has lately pub lished a report embodying the results of an inquiry into the wages of workmen employed in the iron trades. The results are interesting for purposes of comparison. Taking five of the principal iron foundries the average daily wages in 1878 was: In Rhenish Westphalia, 62 cents; Hanover, 62 cents; Lahngebiet, 58 cents; in Upper Silesia, 52 cents; Lorraine, 64 cents. In Middlesborough during the same period the daily wages paid for similar work was equivalent to \$1.02. The monthly expenses of a family, consisting of a man and his wife with six children, are estimated at \$14.23.

Dominion government.

The Russian government has withdrawn, with certain exceptions, the 35 per cent. premium hitherto paid on steel rails manufactured in that country. This premium will hereafter be paid only on rails made

6. What was the probable amount or damage done?

(a.) To standing timber,
(b). To forest products prepared or in course of preparation for market.

(c). To other property, with such specification as may be practicable.—(In answering the inquiries under this, please specify the counties or other districts to which the answers apply).

7. What measures can you suggest, as applicable in your region, for preventing the occurrence, or for limiting the spread of these fires?

8. Any facts of historical importance relating to forest fires in former years would be very desirable, as also references to published accounts concerning them. Should other sources of information be within your knowledge, you would confer a favor by referring us to them.

WM. G. Le Duc, Commissioner.

Department of Agriculture, Washington, D. C., October, 8. 1880, Inquiries relating to the dying off of the spruce timber in certain sections of the united

may know concerning the progress and direction of the injury:

(c). Was the mortality among the spruce timber preceded by any gale of wind, throwing down the trees in unusual number—thus affording (as some believe) an opportunity for the multiplication of insects that attack the trees—or was it preceded by a season of exceptional nature as to cold, drouth or otherwise?

(d). Does the injury appear to be increasing, or is it on the decrease?—If the latter, when was it observed as greatest?

(e). Is it observed that trees when beginning to die are infested by an insect or its larver?—If so, it is desirable to procure specimens. They may be safely sent by mail in a small vial placed in a hole bored in a block of wood, marked "specimens," and so covered that the wrapper will admit of some opening at one end. These should be marked or numbered, so as to identify them, when accompanied by written descriptions sent by letter:

(f). What is the relative amount of death among the spruce timber within your knowledge? In settimating this, please mention the counties or other districts to which the estimate applies.

Wis G. Le Duc, Commissioner.

The following is a memorial adopted by the American Association for the Advancement Africulture, outlining a proper course of action to be taken by the various State governments for the protection of forests. The charcoal ironmasters of the country cannot do better than to use their influence to secure the legislation recommended by the me-

session.

Memorial of the American Association for the Advancement of Science, in Relation to the Need of Attention to our future Forest Supplies.

To the Honorable the Legislature of the State of —: We would earnestly invite the attention of your honorable body to the great and increasing importance of providing by adequate legislation for the protection of the existing woodlands of the country against needless waste, and for the encouragement of measures tending to the more economical use and the proper maintenance of our timber supply.

economical use and the proper maintenance of our timber supply.

It is evident that the consumption and waste of the forests of the country much exceed their restoration by natural growth, that the native supply of timber of the better qualities is rapidly becoming less, and that the demand for building purposes, manufactures and other uses, is rapidly increasing from year to year.

This decreasing supply and growing consumption must unavoidably lead to serious inconvenience, and may, unless seasonably prevented, ocasion great public injury by leaving the future without adequate supplies.

We deem it an established fact that the interests of agriculture are promoted by the presence

We deem it an established fact that the interests of agriculture are promoted by the presence of a due proportion of woodlands of a country, and that they suffer when clearings are carried to excess. The protection which they afford appears to mitigate, in a sensible degree, the vicissitudes of climate, and to maintain the supply of water in springs, rivulets and wells. They shelter a country from injurious winds, and may be made practically useful in preventing the drifting of snows and sands, in preventing or diminishing damages from torrents and in limiting unhealthy emanations from marshes. Their influence in connection with questions of water supply for cities and the maintenance of hydrautle power and of navigation in rivers and canals where these may be affected by droughts, deserves serious attention.

But it is especially to the woodlands, as a source

proved to be published for distribution among those who would be the most benefited by this information.

5. By encouraging educational institutions within the state to introduce a course of instruction having reference to practical sylviculture. This object may be promoted by the aid of collections, and by correctly labeled plantations of the various species of forest trees adapted to the soil and climate. At agricultural colleges and at higher institutions of learning, stations might be advantageously established under State patronage, for experiments and observations in cultivation and acclimatization. The distribution of seeds and plants affords a direct and efficient aid in the promotion of an interest in this subject.

6. By laws tending to prevent forest fires, by imposing penalties against the willful or careless setting of such fires, and by enlarging and defining the powers of local officers in calling for assistance and in adopting measures for suppressing them. The waste from this cause in some years greatly exceeds the amount of timber used, and there is no question connected with forest supplies that demands more serious attention. Our main reliance appears to depend upon vigilant precautions, enforced by adequate penalties and sustained by a strong public sentiment.

7. Under favorable circumstances, model plantations might be established and maintained by a State government under the care of persons specially trained to the profession of forestry. Their locatian should be chosen with a view of affording convenient opportunity to those who might wish to learn approved methods of management by the study of a work worthy of initation.

8. The appointment of a Commission of Forestry under State authority (analogous to the

STATES.

It is found that the spruce (abies nigra and abies alba) are at the present time, and have been for a few years past, dying off in unusual numbers, so as to seriously impair the value of woodlands in which they grow, and affect the supply of this useful timber in the markets. With the view of ascertaining the extent of this injury, and learning such facts as can be known concerning its origin, progress, causes and prevention, the correspondents of the Department of Agriculture are requested to answer, so far as may be, the following inquiries:

1. Does the white spruce (abies alba), or the black spruce (abies nigra), occur as a timber tree, as nearly as may be stated, and any facts of interest concerning its occurrence:

2. Has it been observed that the spruce has been dying in unusual numbers in recent years?—

(a). When did this dying-off begin?

(b). Was it heard of in other sections of the country before it came under your own observation?—If so, please mention such facts as you the following.—If so, please mention such facts as you are generally not slow to appreciate intelligence of our fellowing.—If so, please mention such facts as you are generally not slow to appreciate in the questions arising upon this subject, we depend much upon the intelligence of our fellowing.

advantages or to foresee a real danger where the indications are apparent. When this danger is fully realized, we believe that no time will be lost in seeking to apply the remedy. The measures we recommend will tend to awaken an interest in the subject, and lead to an intelligent understanding of the means for meeting the dangers that may arise from undue exhaustion of our forest supplies. They will diffuse the benefits gained by experience, for the good of all, and educate public opinion to a degree that will sustain more energetic measures, as their necessity may be hereafter more fully known. Franklin B. Hough, Chairman of the Committee, A. A. A. S.

#### On the Casting and Rolling of Steel.

The discussion of the causes of occasional unexplained failures of modern steel con-tinues to occupy the attention of producers and consumers in England. A correspondent of the Engineer sends the following suggestions and observations, which deserve consideration:

It seems to me that we have become accus tomed to deal with this material in such vast masses that we are losing sight of some facts which its manufacture on a smaller scale has taught us. If we go back to cast steel as made in ordinary crucibles, and from best marks of iron, we know that it is necessary to allow it to remain in a molten state for some time before it is taken from the furnace and poured into the molds. If it be taken from the furnace too soon, or allowed to remain in the furnace too long, the ingots made from it will not work, and the steel so made from it will not work, and the steel so made is most unsatisfactory. On the other hand, if we remelt in crucibles Bessemer scrap, it is necessary to get it from the furnace as soon as it is melted, or deterioration takes place very rapidly and we get no satisfactory result. This points to two things—First, that during the melting of best irons a certain process of purification goes on in First, that during the melting of best irons a certain process of purification goes on, in which the impurities rise to the surface in the form of slag; and, secondly, that the refining cannot be carried too far without injury. This is shown in the case of Bessemer scrap, which, having been refined in the converter, merely requires remelting.

Again, when taken from the furnace there is a special heat at which the metal must be

s a special heat at which the metal must be poured into the molds, which the melter judges by his eye from long practice. If it be poured too hot it will be what the workman calls scalded, and will not work, or man caus scaded, and will not work, or only imperfectly; and the same result fol-lows if poured too cold. It is then what is called chilled, and will not work. In the first instance, if it be put into a slow fire and allowed to soak, as it is termed, its conand allowed to soar, as it is termed, its con-dition, unless very bad, may to a great ex-tent be restored and the steel rendered serviceable; but in the latter case it cannot. When the metal is poured into the mold at the proper heat, it shows upon fracture a the proper neat, it shows upon fracture a beautiful crystalline appearance, varying slightly according to the quality and temper of the material. If poured too hot it as-sumes a striated appearance, like a great number of fibers radiating from the center to the circumference in every direction. If on the other hand, it be poured too cold, it

premium hitherto paid on steel rails manufactured in that country. This premium will hereafter be paid only on rails mand from domestic materials, and on remnant. Set the content of the paid only on rails mand from domestic materials, and on remnant. Set the content of the paid of navigation in rivers and canals where these may be affected by droughts, deserves serious at a proposition of the principal factors of rails worn out in service on Russian railroads. The new regulation will take effect January i.

The Protection of our Forests.

The following circulars have been sent out by the Department of Agriculture relating to forest first and the reported dying off of spruce timber in certain of all who are in possession of facts likely to be of interest to correspond with the Bureau of Agriculture;

DEPARTMENT OF AGRICULTURE, Wallington, D. C., October 8, 1865.

The Continuous of the content of the being owned by private citizens, and with the Bureau of Agriculture;

DEPARTMENT OF AGRICULTURE, Wallington, D. C., October 8, 1865.

The content of the conten rious circumstance, but one which steel hakers well know, that if such steel be kept askers well know, that if such steel be kept or some time, it gradually changes its charter and becomes not only workable, but you more plastic than usual, of which I

upon as a state of rest, there are active molecular changes taking place of which we molecular changes taking place of which we are quite ignorant. But the mode of manipulating the metal, supposing the casting has been done successfully, seems to me to be very much at fault. The method of working down an fagot in the rolls by putting it through squares formed in the rolls diagonally, seems to me to put strains upon the metal to which it ought not to be supjected. metal to which it ought not to be subjected. Suppose that we are working down a 6-inch ingot, the first gate in the rolls would be, say, 2½-inch in depth, on a 14-inch roll. Now we an see at once that the strains must be very unequal, and the flow of the particles of metal upon each other must be equally so. If we take the diameter of the rolls at the bottom of the gate it would be 9-inch, and the circumference will be 28.27inch, while the circumference of the face of the roll will be 43.95-inch, and will move considerably over one-third faster at the bottom than at the top; and as time is evidently a matter which in the displacement of the particles of the metal must be taken into account, then if we run the rolls at 100 revo-lutions per minute, this number, multiplied

tion the particles will all be set up in a contion the particles will all be set up in a contrary direction, and the continuity of their adhesion will probably be considerably injured. As bearing upon this, I remember a conversation which I had with Mr. Hampton several years ago, in which he told me that when he was superintending the rolling of armor-plates he got the best results when they were rolled in one direction only:

Mr. Markon detacts that the test converted to the particle of the consequences being similar. Slag No. 3, was also run from a hot furnace, quantity very unsatisfactory. Slag No. 4, also giving iron of first quality with rather better yield than preceding. Slag No. 5, iron ef low quality and poor yield. Slag No. 6, iron of mixed qualities and moderate in quantity. they were rolled in one direction only; putting on just sufficient pressure in the reversing merely to bring the plate back

#### A New Telegraph Machine.

Mr. Royal E. House, the last of the original telegraphers of the Morse time 30 years ago, has, it is said, perfected a system by which from 250 to 300 words a minute can be transmitted, received and permanently recorded, and which is automatic. The first is built on the general principle of the type-writing machine, but instead of printing characters, cuts long slits of greater or less characters, cuts long sits of greater or less length in some strip of hard and stiff manila paper, with pointed knives, which are raised alternately through the lower and upper edges of the paper by a system of levers, worked by a series of brass keys, the strip of paper passing from a wheel through a narrow brass galley and, under a constant the knives work. The length of the slit indicates the letter to a small fraction of an inch. The strip of paper, whose marks are not those of a punch, but cut slits in a rapidly moving strip, is then placed in a machine connected with a battery, and moves quickly through it. Two constantly revolving wheels, with sharp, but not keen, edges fall readily into the slits—upper and lower alternately—of the paper, and thereby make an electrical connection with a receiving instrument at another office, with a set of knives similar to those in the slit in the materials are alticious, while magnesia is of no service whatever, but a positive injury, the latter has been treated as the intruder. At the same time, these analyses bring us face to face with the fact that, even in the entire absence of magnesia, there is the liability of the alumina entering into combination with lime when the materials have an excess of alumina in their composition.

Duty on Steel in Sheets. set of knives similar to those in which the original slip is placed. The knives in the second machine cut slips of a length corresponding to those in the original, and can ponding to those in the original, and can be read by an expert, although they can be printed in the fourth machine with such rapidity as to make handwriting comparatively tedious and useless. This last instrument prints on somewhat the same principles as the gold and stock automatic telegraph, but the letters are printed from the cut slip without any interference than that of the power by which the machine is run. These messages record themselves, and the presence or absence of an operator at the receiving end is of no consequence. They can be sent with all the quence. They can be sent with all the rapidity of which perfect mechanism is capable, and will, it is claimed, average 200 to 250 words per minute, or approximate
15,000 words per hour of constant work. All
delay will be in preparing the instruments,
and the work then can be accomplished by
operators at such times as the wires are occupied from other stations. Perhaps the most emarkable feature of the system, and the one which will strike operators and electricians as the most improbable, is the simplest. It is that all messages can be sent to any particular station and to no other, and without eing heard or repeated at any other. The call" is so arranged in its automatic way that while the machinery is in movement in every office, the knife-like wheel only fills the call slits on the tape in the office for which it is intended, giving an automatic reply, and the similarly moving wheels in other office, failing to fit the slits, have no impression

# Aluminates in Blast Furnace Slags.

Mr. William Muirhead, an English chem ist, calls attention, in Iron, to the occasional existence of aluminate of lime and magneexistence of aluminate of lime and magnesia, and aluminate of magnesia alone, in certain blast furnace slags, dwelling upon their injurious effect upon the working of the furnace. By way of preface, Mr. Muirhead states that he has invariably found that slags were perfectly decomposed when acted upon by hydrochloric acid, when the furnaces from which they proceeded were in good working order. While examining good working order. While examining some slags in this manner, he found that the silica obtained, after boiling the hydrothe silica obtained, after boiling the hydro-chloric acid solution to dryness, contained a gritty, whitish powder, which yielded only slowly to such powerful solvents as hydrofluoric acid and fluxing, with a mix-ture of carbonate of soda and potash. A clear solution was finally obtained, and the presence of large quantities of alumina,

residue was rout	ALL .			
			Slag No. 1.	Slag
Silica				38.74
Alumina				13.40
Lime				37.72
Magnesia				9.73
Refractory residue				17.88
Total				97.50
Percentage co	omposi	tion of	above	resi-
dues :				
Alumina			. 68.11	67.98
Lime			. 8.48	9.39
Magnesia				82.63
Total			100.00	100.00
	Slag	Slag	Blag	Slag
	No. 3.	No. 4.	No. s.	No. 6.
Silica	27.01	26.46	87.53	27.64
Alumina	13.00	17.80	18.06	16.24
Lime	39.30	35.50	36.30	37.06
Magnesia	9 00	10.80	11.10	10.60
Refract'y residue				
from silica	10.82	8.18	6.07	9.04
Total	99.13	98.74	99.06	100.58
Percentage co	mposit	tion of	above	resi-
dues:				
Alumina	65.88	68.92	68.72	74.00
Lime	14.96			
Magnesia	19.16	31.08	31.28	20.00
Total	100.00	100.00	100.00	100.00

into the numbers as given above, may give us some idea of the strains to which the tenacity of the metal is subjected. Nor is the matter of reversing for plates less objectionable. When a plate is put through the tenacity of the metal is subjected. Nor is the matter of reversing for plates less objectionable. When a plate is put through the consisted of a double aluminate of magnesia only. Slag No. I was formed in a furnace work-definite position the one to the other, and which may probably be of a somewhat elongated character. Now, if this plate be put through the rolls in an opposite directional of the metal is subjected. Nor is alumina, 20.05: magnesia, II.05, and so on. These results show that the residues at times and lime, and at others of magnesia only. Slag No. I was formed in a furnace work-definite position the one to the other, and which may probably be of a somewhat elongated character. Now, if this plate be put through the rolls in an opposite directionable. When a plate is put through the particles and lime, and at others of magnesia only. Slag No. I was formed in a furnace work-line of the probable aluminate of magnesia only. Slag No. I was formed in a furnace work-line of the probable aluminate of magnesia only. Slag No. I was formed in a furnace work-line of the particles of which it is formed assume a certain definite position the one to the other, and which may probably be of a somewhat elongated character. Now, if this plate the consisted of a double aluminate of magnesia only. Slag No. I was formed in a furnace work-line of the probable when the particles and lime, and at others of magnesia, II.05, and so on. These results show that the residues at times and lime, and at others of magnesia only. It is such that the residues at times and lime, and at others of magnesia only. It is such that the residues at times and lime, and at others of magnesia only. It is such that the residues at times and lime, and at others of magnesia only. It is such that the residues at times and lime, and at others of magnesia only. It is such that the residues at times and lime, and at others of magnesia only. It is such that the residues at times and lime, and at others of magnesia only. It is such that the residues at t

tions practically identical with No. 1, the

Mr. Muirhead states that the tendency to form aluminates seems to be greater in pro-portion as the furnaces worked hotter, they being, as a general rule, lowest when the iron was hardest, and this, too, when the elementary conditions existed favorable for their formation. He observed unusual thickness and viscidity, which is quite in accord with their composition. It is a wellknown fact that magnesia, in even moderate quantities, reduces the fusibility of slags; it could hardly exist in a more infusible form than in combination with alumina. Mr. Muirhead says that he is persuaded, from data supplied by other analyses, that had it existed from 8 to 10 per cent. less in the slags, it is doubtful whether the aluminates would have been formed, under any condi-tion of working even with the high proportion of working even with the aign propor-tion of magnesia; but alumina up to a cer-tain quantity (say from 12 to 15 per cent.), being a useful and necessary part of the slag where the materials are silicious, while magnesia is of no service whatever, but a

Collector of Customs, Boston, Mass.—Sir: The department is in receipt of your letter of the 13th instant, reporting on the appeal  $(7441 \ f)$  of Wetherell Bros. from your decision assessing duty at the rate of 2½ cents per pound on certain steel, imported per Marathon, on the 30th ultimo, which the appellants claim to be dutiable at the rate of 40 per cent. ad valorem.

It appears, from the special report of the appraiser and upon an inspection of a sample, that the steel is in the form of sheets, about 7 feet long, 12½ inches wide, and from No. 14 to No. 16, "Stubb's gauge," in thickness. thickness.

The appellants take the ground that, because each sheet varies in thickness between those two numbers, which variance, how-ever, is almost imperceptible, the merchan-dise should not be classified as steel in sheets, but as "steel in any form not otherwise provided for."

This position, the department has to say, is not tenable, as the article is, in fact, notwithstanding such slight variance, steel in

Your decision, therefore, in classifying it as steel in sheets (costing under 7 cents per pound) at a duty of 2½ cents per pound, is affirmed. Very Respectfully,

H. F. French, Assistant Secretary.

#### The Nordenfeldt Gun in the English Navy.

Two hundred thousand rounds of Nordenfeldt animunition were issued in England recently for the use of Her Majesty's ships in the Mediterranean, and are now on snips in the Mediterranean, and are now on their way to Malta. The cartridges, which are the newest thing in the service, are contained in boxes of 96, so that rather more than 2000 boxes were required for the consignment. The bullets are of steel, and weigh 7½ ounces apiece. The Nordenfeldt machine cun from which they are projected. weigh 71/2 ounces apiece. The Nordenfeldt machine gun, from which they are projected, consists of four parallel barrels, with bores rinch in diameter. Their chief object is the attack of torpedo boats, and it is believed that, with a good look-out and one of these guns well served, it will be impossible for any of these dangerous craft to get within striking distance of a ship thus pretected. The most recent experiments have shown that steel plates of %-inch thick are of no account in the way of resistance, for every shot passed clean through, and other plates up to 11/2-inch thick are being prepared, in order to ascertain the full power of the new weapon and its heavy shot. Al-though none but steel bullets have yet been issued, bullets of chilled iron are now being manufactured, and are expected to display equal power of penetration; but, unlike steel, they will break up in passing through the steel armor and scatter their fragments inside the vessel. Each cartridge carries its own ignition, in the shape of a small percussion cap, inserted in the base on the plan usual with breech-loaders. The four-barrelled weapon pivots upon the apex of a conical stand, formed of wrought iron plates, and of a convenient hight for manipulation. It is worked by three men, one of whom watches the delivery of the cartridges into the feeding trough, while the second works a lever backward and forward, firing all four barrels in momentary. succession at every moment, and the third points the gun upon the object attacked, and changes its direction at will by means of well-devised apparatus. It is also pro-vided with racking gear, by which a sweeping movement is automatically imparted by the firing lever.

American Society of Mechanical Engineers.—The first annual meeting of this new society will be held to day, the 4th instate 2 p. m., at the Union League Theater, Twenty-sixth street, between Madison and Twenty-sixtn street, between Madison and Fourth avenues. The council have unanimously voted to invite Prof. John E. Sweet to read the first paper before the society, in consideration of his eminent services in forming the organization. We are informed that the contributions to the first meeting are numerous and varied, so that sessions of much interest may be looked forward to.

It is stated that at the close of the present year no less than 200,000 telephones will be in use in this country. At the beginning of 1879 there were only 12,000; a year later,

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it is not felt. In addition to this the entire weight of the operator is brought to bear to aid the saw, thus giving it a double The Saw is driven by motion of the body so easy and natural that Every machine is guaranteed, both as regards dura-

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Cotton and "Long Flax" Sail Duck,

Art Castings at Ilsenburg.

The Ilsenburg Iron Works are among the oldest in Germany, and the iron foundry there is most probably one of the earliest in the world. In ancient documents written in the fifteenth century, pots, plates, balls, &c., cast at Ilsenburg, are mentioned; while cast-iron plates, which have been collected on the spot for some time past, afford additional evidence on this point. The director of the Ilsenburg Foundry, Oberhütten-Inspector Schott, has collected and arranged those plates in his official residence, and the collection possesses much interest, rot only from an historical, but also from an artistic point of view. All these plates have served as stove plates, and almost all are marked as stove plates, and almost all are marked with a date, the earliest being that of the year 1509. The subjects on the plates are chiefly taken from the history of the Bible, and the ornaments consist of busts, tournaments and allegorical pictures. The latter begin with the commencement of the seventeenth century. Some of the older plates are very beautiful, and the whole collection proves in the best possible manner the great perfection and the high position German art must have occupied in the sixteenth contury, how it declined gradually during the 30 years' war, and how it finally died out utterly during the eighteenth century.

If the earlier time shows, however, the

most originality-for instance, Judith in the tent of Holofernes, surrounded by guns and gabious—the design of the figures, dresses, &c., is nevertheless so satisfactory from an artistic point of view, that the pattern-makers of that time who had carved the models, some of which are still at the stores of the foundry, must have been men well skilled in their art, and must have attained a degree of perfection which has never been since reached. But the success aid not rest with the skill shown in the pattern; the molder using the pattern evidently participated in it, otherwise such fine castings could not have been produced.

not have been produced.

With the decline of skill in making the patterns the taste naturally became corrupted, and the molding less and less perfect, until eventually it lost all artistic value.

Even in the beginning of the present century Even in the beginning of the present century the art of molding was still in a very primi-tive state. When the taste for artistic de-sign began to revive, the hands, still rough and unskillful, were led to better and higher-class productions, which elevated the taste. When the appreciation of elegant forms shall have become general, then, and only then, we shall, in all branches of industry, have pro-ducts equal to those of the sixteenth century. ducts equal to those of the sixteenth century, and the debased taste, now too common,

melting. Such vandalism, however, is now no longer possible, and objects of art are sought for and carefully preserved. How much art education has progressed in this direction has been fully proved by the many collections which have been made during the last few years. With refinement of taste increasing, demands are made on precision and correctness of execution, and public taste has become greatly refined. Imitations

In consequence of the scrupulous exactness with which the old masters executed their work, and which did not admit of neglect even in the smallest and least important detail, great difficulties are met with in the reproduction of such works of art—difficulties are met with in the reproduction of such works of art—difficulties are met with in the reproduction of such works of art—difficulties which are exactally exact in interest. detail, great difficulties are met with in the reproduction of such works of art—difficulties which are especially great in iron castings, oh account of the impossibility of the parts being united by soldering. But, notwithstanding these disadvantages, the problem has been solved, and that in such a manner that iron castings may be substituted for electrotype productions, combining, as highly depreciated by expectations, combining, as highly the for electrotype productions, combining, as highly the formula of the impossibility of the parts being united by soldering. But, notwithstanding these disadvantages, the problem has been solved, and that in such a manner that iron castings may be substituted for the finest impressions, iron foundries will turn out works of art which could not be high temperature of the iron, forces the carbonic acid to escape, disturbs the fluid iron, and prevents the exactness and clearness of neasy, and, being cheaper, they should certain the casting. It is well to examine the the excellence of the molding that the excellence of the molding to the requirements of a good molding sand, and as long as there is wanting a correct understanding of the required penetrability in connection with a consistence of the material sufficient for the finest impressions, iron foundries will turn out works of art which could not be appreciated by eyes which have had opportunities of getting acquainted with more perfect productions. ner that iron castings may be substituted for electrotype productions, combining, as they do, greater strength with equal finemess, and, being cheaper, they should certainly be preferred. These are results which have been achieved through continued exertions with the view of cultivating pure art in the production of iron castings, and it is very desirable that these exertions should be

must even then have been recognized that the molding sand should allow the penetration of the expanding gases, which are produced by the high temperature when the fluid metal is poured into the molds. Otherwise, the fine castings referred to could not have been produced. This condition of the molding sand was far better understood in this remote period than at a later time, when an empiric preparation of the sand was considered to be sufficient, and by which means.

The experience gained from the continued casting of bronze works, which could be applied to iron castings, and the great advantage possessed by these foundries of having to work only for specialties, and of not having, like other foundries, to change the class of work to be done every day, exercised a great influence upon the gradually improved preparation of the suitable sorts of molding sand.

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principles of the open hearth doubtless led to the conclusion that the want of penetra- instances in the neighborhood of Henburg, to the conclusion that the want of penetrability, produced by the great fineness of the sand, caused this disadvantage. Nature rarely supplies a molding sand which possesses both fineness and penetrability, and the general scarcity of such a sand, which induced many important iron foundates. induced many important iron foundries to obtain it at great expense from distant places, naturally led to artificial productions being tried. We shall explain next the experiments made for producing an artificial olding sand, and the results obtained.

MOLDING SAND.

Of the various kinds of molding sand at the disposal of the Ilsenburg Foundry, one is found in the neighborhood, in the diluvial formation, this sand consisting of a mixture of fat loam with coarse grains of quartz. It is used only for the molding of large pieces, and the molds made of it can be employed and the molds made of it can be employed only after having been dried at a high temperature. A rather finer variety of this sand serves, when mixed with other sand, for larger class castings; but in this case, also, it is necessary that the prepared parts of the molds should be dried or heated, in order that by the evaporation of the water that more than the prepared parts of the molds. there may be produced a contraction of the proportion of clay which the sand contains, and that thus there may be formed the minute channels which are necessary for the escape of the gases and steam generated at

the high temperature of the fluid iron.

In the chalk formation, which fills the large and, in some places, deep basin adjoining the mountains of the Harzer district, there are found in the neighborhood of there are found in the neighborhood of laenburg, upon the chalky marl, strata of loam mixed more or less with grains of quartz of different degrees of fineness; the penetrability, and thus the utility of the molding sand depending upon this admixture. In a few exceptional places there is found a molding sand that could almost be used in its natural state; the quantities thus obtained, however, are very small, and are not in proportion with the increasing demand of lisenburg Foundry. If, therefore, the artificial preparation of the molding sand had not been successfully introduced, the necessary supply could only have been obtained from distant sources at great expense.

After having recognized the penetrability After having recognized the penetrability of the sand for steam and gas as the chief characteristic necessary, it became next an important matter to determine the signs of this required penetrability existing, and for this purpose the following process has been adopted: A knewn peculiarity of a sand which allows of a casting being made in it without allows of a casting being made in it without and the debased taste, now too common, will gradually disappear.

The necessity of extending art to all departments of industry occurred, nearly 40 years ago, to Mr. Schott, who was at that time engaged on the Brunswick Works, the Carlshütte and the Wilhelmshütte, both works being still famed for the excellency of their foundry productions. He is now, and has been for 35 years, the managing director of the Ilsenburg Foundry, and from the first he sought to cultivate art in the molding sand for casting in a green state. The balls of sand thus prepared, and made of uniform size, are then weighed, and water is next poured upon them as long as it is absorbed. When absorption no longer taste has become greatly refined. Imitations it is absorbed. When absorption no longer and reproductions of antique works of art takes place, and the water appears to reare no longer accepted as the simple copy of the outer forms, but an execution is demanded which should exactly represent the original in the smallest detail.

the casting. It is well to examine the amount of carbonic acid contained in the sand before using it, by pouring acid upon

It was in 1844 when, by the kind recom

samples obtained from Paris, it was found that the former was deficient in the contents of fine grains of quartz, hence its penetrability was not the same as that of the Paris material.

The treatment above referred to of the sand consisting of a mixture of fat loam and coarse grains of quarts, the insufficient penetrability of which had to be increased by continued drying or roasting, had to be applied also to the fine sand, and it had to be ascertained whether the deficiency in the contents of grains of quartz could not be replaced by the roasting of a part of the denser sand, which was consequently exposed to such a high temperature that the vellowish-gray color was changed into red. The treatment above referred to of the posed to such a migh temperature that the yellowish-gray color was changed into red. The mixture of this roasted sand with the original yellow-grayish sand in its natural state, gave the desired result, and the roasted sand was found to be a perfect substitute for the grains of quartz in which the natural sand was deficient. In order to make, however, this artifical mixture equal to the natural sand, a careful treatment was necessary, and for this purpose stamping mills and revolving drums of oval section, containing loose balls, were adopted for the powdering and mixing of the sand. These drums have a diameter of about 3½ feet and a length of not more than about 4 inches. while the speed of rotation is arranged in such a manner that the balls are not so acted upon by centrifugal force as to prevent them from remaining at the bottom of the drum, or they would not exercise the necessary pressure upon the sand, which is put into the drum through an opening at the side. In order to obtain the required fine-ness of the sand, the passing of it through ness of the sand, the passing of it through fine-meshed sieves becomes necessary, and for this purpose bolting cloth made of sheep's wool, and known in Germany under the number 16, has been found best. A fine molding sand applicable for most castings in green sand was thus successfully produced, but the finer and better sorts of a reddish color seen and found at Paris

reddish color, seen and found at Paris, which possess an extraordinarily high amount of penetrability, and which, more-over, allow of the cleanest and most sharp-est castings being made, were still wanted. It had been especially observed that the castings in this sand, which was even moistened to a great extent, remained unusually undisturbed, and it became, of course, a natural necessity to possess a molding sand

of equal quality.

At first an endeavor was made to discover such a sand in a naturally loose state, and it was thought that it might be found in the termediate layers of the colored sandstone information met with on the outskirts of the Carishitte and the Wilhelmshütte, both works being still famed for the excellency of their foundry productions. He is now, and has been for 35 years, the managing director of the Ilsenburg Foundry, and from the first he sought to cultivate art in the productions of the works. The results of his exertions in this direction were shown by the exhibits of castings of works of art in the German annex for art and industry at the Vienna and Philadelphia exhibitions.

It is unfortunately but too true that the want of appreciation has caused numerous works of art to be destroyed. Even in the first half of this century it has happened that ancient church vessels have been sold by the authorities for the value of the metal for remelting. Such vandalism, however, is now no large the solution of the metal for remelting. Such vandalism, however, is now no large the same productions of the works of art are leading to his requirements, in order to the same, and he has happened the sharp corners, edges, and ribs of the molds, for which purpose water may be dropped upon the latter by means of a brush. The water disappears, and is absorbed without doing any damage to the mold. This quality of the sand has been mold. This quality of the sand has been with the sharp contained too much clay for the required penetrability. Even after roasting it was found to be useless, because it had lost all its binding power, and attention was then directed to the solid sandstone, which, when ground, was expected to supply material: After various mixtures of sand have been prepared, and after it has been ascertained that sharp and distinct impressions and be taken with the materials, equal-sized balls or cubes are formed by compressing the sand that a slight further compression is just possible; this is easily done with a little practice, as this manipulation forms an little practice, as this manipulation forms an little practice, as this manipulation forms and from the could be found in a loose state in these storate contained too much clay for t just possible; this is easily done with a little practice, as this manipulation forms an important factor in ascertaining the quality of the sand for all molders, and determines the degree of moisture to be given to the with the yellowish-gray sorts of sand menwith the yellowish-gray sorts of sand men-tioned above, has produced an exceedingly suitable molding sand, the molder having it

suitable molang sand, the molaer having it in his power, by adding more or less of this ground stene, to vary the quality of the material in accordance with the requirements of the work he has in hand. The knowledge of the proper molding sand required for a given pattern is the best proof of the ability of a molder, and such a knowledge can only be acquired by extended practice and correct advice, which latter, however, is unfortunately very often wanting in foundries in producing inferior work. The importance of the correct preparation of the sand is in general little appreciated, and so long as no proper attention is paid to the re-

found that the excellence of the molding sand to be used does not depend so much upon the chemical composition, but rather upon the mechanical and correct mixture of the argillaceous and siliceous components. very desirable that these exertions should be continued by future iron founders.

With regard to the process of production, it may be observed that the two main points upon which the casting of iron depends are the molding sand and the metal. About 300 for 400 years ago the conditions for preparing the sand required for casting upon the open hearth must have been known. It must even then have been recognized that the protestion of good castings, could be studied. The experience gained from the continued by future iron founders. Mines at Paris, M. Le Play, the Professor If the chemical and correct mixture of the argillaceous and siliceous components. If the chemical investigations made in Paris and London with the small parts of molding sand that remained at those places on the castings exhibited by Ilsenburg had been which it possessed, necessary for the production of good castings, could be studied. The experience gained from the continued by the professor If the chemical investigations made in Paris and London with the small parts of molding sand that remained at those places on the castings exhibited by Ilsenburg had been castings exhibited by Ilsenburg had been duction of good castings, could be studied. The experience gained from the continued the molding sand should allow the professor of paris. rains of quartz, and the plastic qualities of

> In the course of years a special custom has often taken root in foundries, in consequence of which most extraordinary results are often produced. The practice acquired in the manipulations can go so far, for instance, that a sand possessing a very small amount of binding power, but a high degree of penetrability, as often found in nature, is used with the best results. The ability acquired to produce fine casting in a

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Fig. 5.-Back View.



Fig. 2.-Back Plate.



Fig. 1.-Circular Rack.



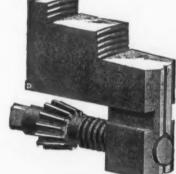


Fig. 4.—Improved Jaw.

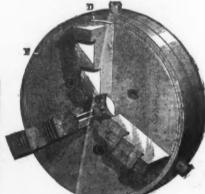


Fig. 6.-Front View.

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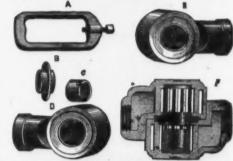


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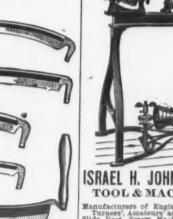
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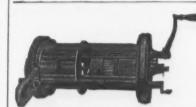
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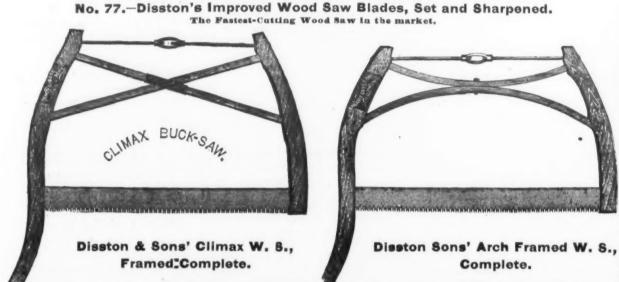
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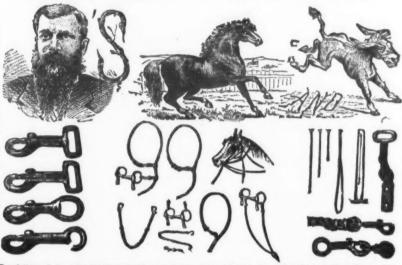
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### The Work in the Hudson River Tunnel.

Work on the Hudson River Tunnel is being pushed with energy. Mr. Lovejoy, an engineer connected with the enterprise, states that there are 25 men in a gang, alternating in watches of eight hours each, Mr. Anderson, the chief engineer, taking personal charge. They are running out silt and putting in plates and brickwork, great caution being observed at every step to guard against the possibility of accident. Special care is taken not to uncover the face of the silt more than is necessary to sink in an additional plate, one plate going in at a time. A pocket is cut out of the silt, and a plate put in as soon as space can be made for the workman to move. The plate being brought into position, is drawn into the pocket by the outward pressure of air injected by the pumps, sucked in, so to speak. The pressure now maintained is 17 pounds per square inch. If the face of the silt ex-cavation should be left uncovered for any considerable area, it would begin to bulge and get out of shape, and eventually an ir-

ruption of some sort might be expected.

The exact stage of progress now reached was explained by Mr. Lovejoy thus: "It will be understood that the caisson now forms the working chamber, occupying the space which originally formed the temporary entrance to the tunnel proper, just beyond the air-lock, which debouches into the working shaft, into which several of the laborers escaped. We have made a connection with escaped. We have made a connection with the south tunnel and are cutting away the bulkhead, so as to form a connection with the main tunnel. We expect that everything will be completed within a week or thereabouts, so that we will have both tunnels abouts, so that we will have both tunnels open and can resume the process of excavation. We had to fill in the short tunnel so as to stop the ingress of water. The other tunnel will be allowed to remain for the present filled equal to about half its diameter, as it will be easier to run cars with material on the bottom thus formed. Four bodies of workmen remain to be recovered but will seen be remain to be recovered, but will soon be reached when we advance the work in the original headings.'

eriginal headings."
A recapitulation of events was given by Mr. Lovejoy, as follows, beginning with the disaster of July 21: "We first put down the coffer dam, which took two weeks to build. Its dimensions are 45 x 50 feet, and the timber used was 6 x 12 inches and 12 x 12 inches. We then excavated to the depth of 20 feet, when water broke in to such an extent that we were compelled to abandon the work, the pumps throwing out 9000 gallons a minute. Colonel Haskin was satisfied that the water was not coming through the dam, but directly from the river. Then we built the caisson, 41 x 22 feet inside, sinking it 40 feet with ease. It is built of 12-inch Georgia pine throughout and in several thicknesses. We next made a connection through the side of the caisson with the old air-lock in the shaft. The next move was to commence on the other side of the work (in the old tunnel) to bring up the inverted arch to the bottom edge of the caisson. That, too, has been done, when the end of the caisson opposite to the south tunnel was cut through and con nected by running plates through the cais son, letting them rest on the top of the completed brickwork of the south tunnel, thus forming a roof. Then the centers (wooden frames) were put in and the brick arch turned over. We are now putting in the iron plates in the same way over the north tunnel, and this connection will be completed. tunnel, and this connection will be com-pleted this week, giving a direct connection from the old shaft, through the caisson, into

Mail Lock Contracts.—Sealed proposals Mail Lock Contracts.—Sealed proposals will be received at the Post Office Deparment in Washington until noon of Jan. 26, 1881, for turnishing a new kind of mail locks and keys for registered mails. No pattern is prescribed, but bidders are left free to offer such devices as their own ingenuity may suggest, the only conditions being the general fitness of the locks for the purpose required, and that the lock accepted must be reserved for the sole and exclusive use of required, and that the lock accepted must be reserved for the sole and exclusive use of the United States. Specifications, contracts and forms of proposal will be furnished on application by letter to the Second Assistant Postmaster General, and no bid will be considered unless made in accordance with the

# Special Notices.

# TO MANUFACTURERS.

The village of New Castle is prepared to grant liberal aid to a company to carry on a Manufac-turing Business that will employ not less than fitty hands. Buildines can be obtained at a nom-inal sum and exemption from taxes for a term of Years. 'A correspondence is solicited. Address I. L. STROWGER, New Castle, Ont.

# Spring Machinery.

Any party having new or good second-hand-nachinery for the manufacture of carriage springs for sale, address at once, with description, price and where to be seen.

Office of The Iron Age, 83 Reade St., New York

WANTED-A TRAVELING SALESMAN who understands the Railway Supply business. Office of The Iron Age, 220 S. 4th St., Phila., Pa

# Wanted-An Agency.

A young man 26 years of age, who has a thorough knowledge of the Wholesale Hardware business in Philadelphia, would like to represent some leading manufacturer in Philadelphia. Best of reference,

Address (G)., Office of The fron Age, see S. 4th St., Phila., Pa

# Wanted.

TO PURCHASE 8 or 10 NAIL MACHINES Please address, sating size, condition and price, NAILER,

Caro of Jos. D. Weeks.

Office of The Iron Age, 79 4th Ave., Pittsburgh, Pa

### Special Notices.

Large Stock of New and Second-Hand

MACHINERY.

Three pair Scales, weigh to 3500 lbs. Fairbanks. One Horizontal Corliss Engine, 200 h. p. One Delamater Sugar-house Engine, 26 in. x48 in. One Horizontal Engine, 11 in. x 18 in., Whitehall & Hampsen One Horizontal Engine, 15% in. x30 in. Todd & Raf-One Horiz'l Engine, 16, 11 in. x 20 in. Todd & Raf-One Horiz'l Engine, 0 in. x 12 in. Eric Iron Works. Five Horizontal Engines, 0 in. x 12 in. J. & R. J. Four Horizontal Engines, 8 in x 12 in. [Gray. One Horizontal Engine, 5 in. x6 in. One Portable Engine, 5 horse power Two Horizontal Engine, 5 in. x6 in. One Hor. Tubb. Boilers, 5 ft. x 14 /5 ft. 100 3 /4 in. tubes. One Hor. Tubular Boiler, 6 ft. x 14 ft. 50 4 in. tubes. Two Hor. Tub. Boilers, 5 ft. x 14 ft. 50 4 in. tubes. Two Hor. Tub. Boilers, 5 ft. x 14 ft. 50 4 in. tubes. Two Hor. Tub. Boilers, 5 ft. x 13 ft., 43 4 in. tubes. Three Hor. Tub. Boilers, 4 ft. x 13 ft., 34 4 in. tubes. Three Hor. Tub. Boilers, 4 ft. x 13 ft., 34 4 in. tubes.

MACHINISTS' TOOLS.

MACHINISTS' TOOLS.

One Lathe, 19 in. swing, 20 ft. bed. Fitchburg MaOne Lathe, 16 in.x7 ft. bed. (chine Co.
One Lathe, 14 in.x5 ft. bed. N. Y. Steam Eng. Co.
One Planer, 22 in x5 ft. bed. N. Y. Steam Eng. Co.
One Planer, 22 in x5 ft. bed. Chain feed.
Two Crank Planers, 18 in.x2 ft.
One New Haven Drill. Will bore in center of 60 in.
One New Haven Drill. Will bore in center of 60 in.
Two Ensley Drills. One Vertical Boring Mill, bore from 26 to 90 inches.
One Vertical Boring Mill, bore from 26 to 90 inches.
One Turn Table and Boring Mill, 11 feet between
One Travis Boring Mill.
Two Slabbing Machines.
One Merrill Compressed Air Hammer, Hotchkiss
One Upright Drill, to the center of 61 in. [Patent,
One Upright Drill, to the center of 61 in. [Patent,
One

One Merrill Compressed Air Hammer, Hotenkiss
One Upright Drill, to the center of 61 in. [Patent.
One Eighteen Drilling Machines.
Ten Bench Lathes.
One Bogardus Mill. No. 5.
One Bogardus Mill. No. 2.
One Bogardus Mill. No. 2.
One Sturtevant Blower, No. 2.
One Sturtevant Blower, No. 2.
One Sturtevant Blower, No. 2.
One Large Fower Punch for bridge work.
One 9000 ton Hydraulic Fress and Pump.
One Dudgeon Beam Punch.
One Punch and Shears combined, will punch 1½ hole in 1-inch iron in the center of 30 in.
One large Shears, will cut ½ iron any size.
One Hand Funch. Pope's patent.
Three Vacuum Tanks, of ft. X12 ft.
One hundred Vises.
Five Portable Forges.
Colton Drawing Machine.
One Knowles Special Pump, No. 7.
One Guild & Garrison Pump, No. 3.
Six Hardick Pumps, from No. 0 to No. 4. New.
One Woodward Fump, No. 1.
7900 fis. ½ Flate Iron, for safes.
Five Smaller.
Two Bliss & Williams Presses.
Five Smaller.

ive smaller.
full line of Woodward Steam and Fire Pumps.
ne hand-power Paper Cutter.

GRAY'S MACHINERY DEPOT. 37 Dey Street, New York, U. S. A.

# Europe.

### Matheson & Grant's

Address is

32 Walbrook, London, England.

Engineers and Commission Agents for all business relating to engineering and metals in Europe. Telegraph address,

MATHESON, WALBROOK, LONDON.

# Bissell & Welles, Wholesale Hardware Auctioneers,

83 Chambers and 65 Reade Sts., N. Y. Sales held weekly for the trade. Consignments olicited. We refer to the leading Manufacturers

HAVE YOU READ THIS? JENNINGS' DISCOUNT TABLES.

JENNINGS DISCOUNT TABLES,

"4, 5 to 8, 5 and all the combinations,"

"5, to 6, 5 and all the combinations,

ag, "-Sargent & Co., New York.

To further introduce the work, the Present Edition will be sold at half price, as follows:

Counting House Edition.

Pocket Edition, Cloth Bound.

"0 Pocket Edition, Paper Covers.

Curreacy may be sent by mail at publishers," risk. 

# Wanted.

A TRAVELING SALESMAN, thoroughly posted in Carriage and Saddlery Hardware. One acquainted with the trade in Michigan preferred. Address, giving references, &c.

MORLEY BROTHERS. East Saginaw, Mich.

A MACHINIST and ENGINEER of 25 years' ex-perience in the machine business, desires the Office of The Iron Age, No. 83 Reade St., N. Y.

# ON HAND AND FOR SALE.

ON HAND AND FOR SALE.

Horizontal Boiler, 42 in x 10 ft., 28 4-in. tubes, 36
Shell, 7-16 heads.

Horizontal Boiler, 42 in x 10 ft., 20 2-in. tubes, 3-16
Shell, 36 heads.

Vortical Boiler, 42 in x 10 ft., 20 2-in. tubes, 5-16
Shell, 36 heads.

Vortical Boilers, with Bases, Grates and Fixtures:
42 in x 7 ft., 20 2-in. tubes, shell and fire-box 3-16
in. heads 3-in. New.
36 in. x 6 ft., 80 2 in. tubes, shell and fire-box 5-16
in. heads 3-in tubes, shell and fire-box 5-16
in. heads

# FOR SALE, PORTLAND MACHINE WORKS.

Per of following Trustees. E. P. CUTLER, Boston. R. PHENIX, at Works, Portland.

# SCREWS

FOR SALE.

# Special Notices.

# SECOND-HAND and NEW TOOLS

FOR SALE LOW. November List, No. 1.

Pi Lathe, 31½ ft. swing, will turn a pulley as ide as oft, face. vide as oft, face. Pit Lathe, 16ft, swing, will turn a pulley 30 inch

Pit Lathe, 16 ft. swing, will turn a pulley 30 inch face, with gear-cutting attachment.

Lathe, 40 in. swing, 27 ft. bed.

Lathe, 54 in. swing, 26 ft bed.

Lathe, 100 in. swing, 18 ft. bed.

Lathe, 20 in. swing, 18 ft. bed.

Lathe, 26 in. swing, 15 ft. bed.

New.

Lathe, 28 in. swing, 6 ft. bed.

Lathe, 26 in. swing, 16 ft. bed.

Lathe, 26 in. swing, 16 ft. bed.

Lathe, 24 in. swing, 18 ft. bed.

Lathe, 21 in. swing, 8 ft. bed.

Lathe, 19 in. swing, 6 ft. bed.

Lathen in in. swing, 6 ft. bed.

Lathen in in. swing, 6 ft. bed.

Lathen in in. swing, 6 ft. bed.

Machine for facing and drilling pipe flanges, automatic.

Machine for facing and drilling pipe flanges, aumachine for facing and drilling pipe flanges, aumatic.

Planer, 3s in. wide, 6 ft. long.

Planer, 1s in. wide, 1 ft. long.

Planer, 1s in. wide, 2 ft. long.

Planer, 2s in. wide, 5 ft. long.

Planer, 3s in. wide, 5 ft. long.

Planer, 3s in. wide, 8 ft. long.

Planer, 2s in. wide, 18 ft. long.

Planer, 2s in. wide, 18 ft. long.

Planer, 2s in. wide, 18 ft. long.

Dimension Planer, 24 in x 18 ft.

Upright Drill Press, 36 in. swing.

Upright Drill Press, 36 in. swing.

Upright Drill Press, 36 in. swing.

Suspension Drill

Upright Boring Mill, 4 ft. between uprights.

Shaping Machine, 16 in. stroke.

Milling Machine. Lincoln pattern.

Gear Cutting Machine.

Profiling Machine.

Profiling Machine.

Boring Bar, 1s½ in. diam., 10 ft long, self-feeding.

Boring Rar, 9 in. diam., 10 ft long, self-feeding.

Forcing Machine. Cop forcing shafts of pulleys.

Two McKenzie Cupolas, 4 ft. x 4½ inside.

Rattler Ladles, &c., &c.

Reven Cranes.

Jig Saw.

Saw Tables.

Por 22 le by

For sale by The Geo. Place Machinery Agency, 121 Chambers and 103 Reade Sts., NEW YORK.

THE

# Wood & Light Machine Co. **Patterns**

OF THE FOLLOWING TOOLS ARE FOR SALE AT VERY LOW PRICES :

Engine Lathes from so inch to 100 inch swing.
Driving Wheel Lathe, Double Heads, 84 inch swing, and Wheel Quartering Attachment.
Patent Shafting Lathes, so inch, 24 inch and 28 inch swing.
Pulley Lathes, 36 inch and 42 inch swing.
Hand Lathes from 12 inch to 20 inch swing.
Chucking and Boring Lathe, 20 inch, 24 inch and 28 inch swing.
Upright Drille from 16 inch to 60 inch swing.
Traverse Drille, 25 inch swing.
Upright Drille from 16 inch to 60 inch swing.
Traverse Drille, 25 inch swing.
Planers, to plane from 24 inches square to 72 inches square.
Shaping Machines from 8 inch to 16 inch stroke.
Slotting Machine, 12 inch stroke, 52 inch swing.
Combined Shaping and Slotting Machine.
Slotting Machines, three sizes.
Milling Machines, two sizes.
Milling Machines, two sizes.
Milling Machines, Double Arms and Spindles.
Profiling Machine, 1 two sizes.
Boiler Plate Planer.
Quartering Machine for Locomotive Wheels.
Cutting off and Centering Machine, 3 to 4 inch.
Cutting off and Centering Machine, 3 to 4 inch.
Cutting off and Centering Machine, 4 to 4 inch.
Cutting off and Centering Machine, 5 to 4 inch.
Cutting off and Centering Machine, 5 to 4 inch.
Cutting off and Centering Machine, 5 to 5 inch.
The above Patterns are for sale in one lot or separately, and finished work from those Patterns will be taken in payment, if desired.

#### The Geo. Place Machinery Agency, 121 Chambers and 103 Reade Sts., NEW YORK.

# For Sale.

LARGE SLOTTER, Table 4 ft., 6 ft. between columns, stroke 18 in., end and cross and circular movements. A heavy, well-built tool; in first-rate order; will be sold low. Photo. on application. Also, two Column Drills, Suspension Drill, two

Lathes, two Tank-Iron Punches, three Hydraulic Jacks, Hydraulic Press Pump, eighteen good Steam Pumps, two large Pulsometers, two Power Piston Blowers, 8 and 10-inch cylinders.

A. G. BROOKS & WINEBRENER. sor N. Third street, Philadelphia.

# For Sale.

Job Lots and Bankrupt Stocks Hardware. Great bargains offered to the trade.

A. W. WHEELER.

#### 141 Lake Nt. Chicago, Ill. CRUCIBLE CAST STEEL.

Wanted, by an old-established Sheffield firm, a Wanted, by an old-established substitute and ref-responsible agent with good connections and ref-erences, who would buy Tool Steel, &c., for his own account. Apply

BOX 40, Post Office, Sheffield, England.

# Wanted.

Reveral thousand gross of American Screw Co.'s news, No. 9, 1 inch and 1½ inches long, for sale bulk in quantities to suit buyer at 60 per cent. If the reg. lar screw list. First quality goods. Address

Address

A party owning a complete Rolling Mill desires a practical man, with \$25,000, as a partner to operate the same at or near Chicago, Ilis. Address

THOS. McK.LLIP. 4

72 Washington St., Chicago, Ilis.

# Special Notices.

ROOMS OF

# THE HARDWARE BOARD OF TRADE

LIMITED.

Incorporated A. D. 1877.

Nos. 4 and 6 Warren St , New York.

#### To the Trade and Public:

We are compiling, preparatory to issuing in January, 1881, a limited number of strongly bound books, to contain the names and financial standing, as well as credit ratings, of some Fifty Thousand dealers in Hardware, Cutlery, Guns, Tinware and Stoves, Metals, Iron, Foundries, Machinery of all kinds (including Sewing Machines), Iron and Metal Pipe, Brass Fitting, Plumbers and Dealers is Plumbers' Supplies, and other trades kindred to these throughout the United States.

A large expenditure of money and the very best means have been used to obtain reliable information for the work, and those desiring it can depend upon the information being fresh and largely drawn front these selling the firms, corporations and individuals rated, and the information is as

and individuals rated, and the information is a reliable as it is possible to obtain for such a work.
For Wholesale Dealers and Manufacturers it is
the most desirable work of the kind, as it is prepared with great care, and should be consulted where extended credits are asked. All are not where extended credits are assect. All are not safe for credit because apparently prosperous, and detailed information given at the office will largely aid in forming correct judgments.

The Board of Directors of this company have placed a limit to the number of these books to be

placed a limit to the number of these books to be issued, and under no circumstances will orders placed beyond that number be filled.

The subscription price to the book is placed at THIRTY DOLLARS. All orders must be accompanied by draft on New York for the amount.

We respectfully ask all who desire a copy of this book to forward their orders at once, as they will be entered and filled in the order received.

THE HARDWARE BOARD OF TRADE, Limited, By JAS. H. GOLDEY, Actuary.

TRUSTEES' SALE

### OF THE VULCAN WORKS.

Chattanooga, Tenn., NOVEMBER 10, 1880,

Consisting of the following machinery: BAR AND NAIL PLATE MILL, GUIDE MILL, MUCK, TRAIN, HEATING AND PUDDLING FURNACES, FULL EQUIPMENT OF SPIKE AND BOLT MACHINERY.

WITH ALL APPURTEN-ANCES, BUILDINGS, REAL ESTATE, &c., &c., &c.

Also, Same Day, THE VULCAN NAIL WORKS,

Consisting of 44 Machines, with all appurtenance Buildings, Real Estate, &c. For full particular Address
T. G. MONTAGUE,
Trustee Vulcan Works,
JAMES C. WARNER,
Trustee Vulcan Nail Works
or, S. B. LOWE, Chattanooga, Tem

# FOR SALE. The Best Retail Hardware Stock

and Stand in Kansas City. Is doing a good business.

PRESENT STOCK ABOUT \$20,000. Such an opportunity as this, for a couple of active, hard-working young men, with \$20,000 or \$30,000 capital, is seldom offered. Upon such goods as have advanced extravagantly, we will make such discounts from the present market rate that no one need hesitate about buying the stock from fear of a decline in prices. Address

J. E. FORBES & CO.,
Kansas City, Mo.

### Scrap Iron, Old Rails, Old Steel Tires, and Spring Steel &c.

FRED. PITTS & CO., EXPORTERS, 23 Gt. St. Helens, London, England.

### Stores: Anchor Iron Wharf, Greenwich **ENGINE AND BOILER** FOR SALE.

Steam Engine, 6 x 15, with 12-horse-power boiler, sed pump and heater, nearly new and in good raise hammer of 300 los. in weight BEECHER & PECK, Lock Box 122, New Haven, Conn

# FOR SALE.

ONE 20 INCH x 48 INCH HORIZONTAL STATIONARY ENGINE; heavy box bed, wrough crank, wrought shaft and heavy fly wheel. Will

W. W. McKAIG & SON, Cumberland, Md.

# For Sale.

HARDWARE.-The controlling interest or the whole of a Jobbing Hardware House, already established and doing a profitable business; located in one of the large Western cities. For further particulars, address C. A., Office of The Iron Age, 83 Reade St., New York.

# FOR SALE.

A works completely equipped for the manufact ture of Carriage Axlea. Is well located in relation to coal and iron, also very accessible to market.

# Sanderson Bros. Steel Co

A limited number of shares for sale by EDWARD FRITH & SON, 241 Pearl street, New York.

# Special Notices.

# ONE MILLION **ELEY BROS.**'

Genuine First Quality

BLUE CENTRAL FIRE

# CARTRIDGE CASES

NO. 12 GAUGE.

THE BEST PAPER SHELL IN THE MARKET.

For sale at a great bargain.

ALFRED FIELD & CO.,

93 Chambers St., New York.

# To Iron Manufacturers

### FOR SALE.

The ROLLING AND PUDDLING MILLS of the late Hudson River iron Co., at Poughkeepsse, New York. This property is well situated on the Hudson River and New York Central and Hudson River Railroad, and is in good condition for immediate occupancy. It contains all the machinery necessary for the manufacture of Merchant Iron, Rail and Bolt Spikes, Bolts, &c. Parties in search of this kind of property are invited to examine, and for other particulars to address:

W. S. JOHNSTON, Trustee,
Poughkeepsie, N. Y.

# To Railroad Engineers, Importers and Others.

DAVID OWEN. Inspector of Steel and Iron Rails,

Merthur Tudfil, England. Undertakes the inspection of Steel and Iron Rails, Permanent Way Materials, &c., &c., in England, Belgium and Germany. Thorous hly practical, of many years' experience. Can give very best of references from chief railroad engineers, merchants and others who have employed me to inspect their railroad materials during manufacture and delivery for the last to years. Correspondence solicited. Instructions by mail or cable punctually attended to.

# For Sale.

Stock of hardware, stoves and implements, and tore furniture, in one of the best towns in Kansas. HARDWARE.

#### PHOSE WISHING TO BUY OR HAVE FOR SALE SECOND-HAND

PRESSES or DROP HAMMERS will please communicate with

N. C. STILES,

Box 766, Salina. Kansas.

# Middletown, Conu.

For Sale. Cold Blast Charcoal Furnace.

# First-class in every respect and ready for immediate blast. Stone stack, ample water power; sero cortis season-d wood on hand. Charcoal can be had at 4% cents per bushel at furnace. For further particulars address ROBERT W. MONROE, Kingwood, W. V.

The Sherman Process Co. 9 Pemberton Square, Boston, Mass.,

Issue Licenses to use the Process for the Manufacture of Iron and Steel In the Bessemer Converter, Crucible, Siemens Martin, Puddling, Blast and Cupola Furnaces. The use of this Process improves the quality of the product, saves fuel and labor, and does not re-quire any change in furnace or manner of working See page 17 of The Iron Age of Oct. 5th 1877.

# Wanted.

A GOOD ROLL TURNER, acoustomed to designing Shape Iron. Apply to

PENCOYD IRON WORKS, 265 South Fourth St., Philadelphia.

In Southern Central Iowa, the enly wholesale Heavy and Shelf Hardware Store at the county seat of a county containing 20,000 inhabitants, is offered at reasonable figures. Business established for 20 years. Cash oustomers only need apply. Addres. J. STEELE, Office of The Iron Age, 83 Reade St., New York.

For Sale.

Just Published.

STEEL: Its History, Manufacture, Properties, and Uses. By J. S. JEANS,

Secretary of the Iron and Steel Institute. to coal and iron, also very accessible to market.

Address E. P. BULLARD,

14 Dev St. New York.

No OLD-ESTABLISHED MANUFACTUREE

A OF HARDWARE wishes to secure the rerevices of a person who is thoroughly acquisinted with the Hardware trade, and who is handling a line of goods not conflicting with his own, to sell the first process, it is seen to give a name and names of firms now representing, with reference.

Address, giving name and names of firms now representing, with reference.

TASMANIA, Office of The Iron Age, 83 Reade Street, N. Y.

Sangerson Bros. Sieel Co.

DAVID WILLIAMS,

88 Reade St., New York.

1880.

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N. Y.

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# Trade Report.

Office of The Iron Age, Wednesday Evening, November 3, 1880. 'The past week has been an active one in the financial markets. Ever since the October State elections the Wall street eperators have felt entirely confident of the result in November, and in the activity of the past few weeks they have "discounted" the Re publican success. Consequently, the effect of this morning's election returns on the market was less marked than it would have been had there been more uncertainty as to the result.

Money has continued very easy, the ruling rate on call loans remaining 21/2 @ 31/2 %.

The importations of specie and bullion at this port during the past week were \$3,404,-089, consisting of \$3,375,320 in gold and \$28,769 in silver, as against a total of \$4,234,273 for the corresponding week of last year. The importations since the 1st of January and since the 1st of August compare as follows with the movement during the corresponding periods last year:

Gold	1880. \$45,776,547	January 1 1879. \$52,823,860 6,929,495
Total	\$42,944,917	\$59.753.355
Gold	1880. \$42.822.180	August z z879. \$51,992,135 1,589.942
Total	844,796,044	\$63,582,077

Government bonds have been active during the week, with unimportant fluctuations. State bonds are quiet and firm ; railway mortgages strong and higher. We give below the closing quotations of governments.

The stock market has been strong and active throughout the week, and at times buoyant. This morning the market opened with a "boom" and from the opening quotations there was an immediate advance of & @ 21/2 %. The principal speculation this week has been in Erie, the coal shares, Northwest, Milwaukee and St. Parl, Wabash, Western Union and Lake Shore. We give below the closing quotations of active shares.

The bank return for this week shows a gain of \$178,125 in surplus reserve, which now stands at \$3,743,575 against \$311,800 below at this time last year, and \$10,502,-250 above at the corresponding period in 1878. The loans show a gain this week of \$836,900; the specie is up \$759,500; the legal tenders are decreased \$142,600; the deposits other than United States are up \$1,751,100, and the circulation is decreased

The following is an analysis of the bank totals of this week, compared with that of

last week :				
	Oct. 23.	Oct. 30.	Com	parison.
Loans \$	317,043,300	\$317,880,200	Inc.	\$836,000
Specie	65,613,900	66,372,400	Inc.	758,500
Legal t'nd'rs.	13,159,300	13,006,700	Dec.	349,700
Tot. reserve.	78,779,200			675,900
Deposits	300,881,000	302,582,100	Inc.	1,751,100
Reserve re-				
_quired	75,207,750		Inc.	437-775
Surplus	3,565,450			178,125
Circulation	18,700,603	18,616,500	Dec.	54,000

The foreign trade movements for the week are shown in the following tables: IMPORTS.

For the week ended October 30:

Total for week Prev. reported.	1878. \$5,563,516 232,152,829	1879. \$7,798,317 260,719,283	1880. \$7.049,886 398,458,321
Since Jan. 1			

Included in the imports of general mer-chandise for the week were articles valued lows: Black and Tinned-Iron Rivets in M. as follows : Quantity, Value.

Anvils	334	8064
		6904
Brass goods	34	3.339
Bismuth	8	3,766
Bronzes	26	6,879
Chains and anchors	9	330
Copper	0.0	7.657
Cutlery	184	64,077
Pins	X	158
Guns	66	16,336
Hardware	3	343
Iron, hoop, tons	594	24,616
Iron, pig, tons	4.483	102,621
Iron, sheet, tons	54	5,967
Railroad bars	10,826	87,294
Iron ore, tons	1,377	4,336
Iron, other, tons	8,307	46,201
Metal goods	245	15,289
Nails		313
Needles	8.5	9,668
Nickel	20	932
Old metal	0.0	153
Platina		5,234
Plated ware	4	138
Saddlery	10	1,347
Steel	2,865	32,737
Silverware	7	843
Tin, boxes	14,524	85,329
Tin, 1626 slabs; 112,861 lbs		23,708
EXPORTS OF SPECIA	E.	

For week ended October 30:

Total sinc																	\$6,702,28
Same time in																	13,186,55
Same time in																	11,131,93
Same time in	1877							0	0	0	 						24,053,76
Same time in																	41,681,75
Same time in	1875					0	۰						۰	 		 0	67,636,92
Same time in	1874		p. 1	. ,	. ,				'n.			×		6	6 1	*	44,363,10
Same time in																	44,035,54
Same time in	1872													 , ,			63.443, 19

but this afternoon 1/8 @ 1/4 of the early advance of 3/8 @ 1/2 was lost. The closing

quotations were as follows:	Asked.
U. S. 6's 1880 registered 10234	103
U S. 6's 1880 coupon	803
U. S. 6's 1881 registered	20434
U. S. 6's 1881 coupon 104%	80434
U. S. 5's 1881 registered	XOS
U. S. 5's 1881 coupen	101%
O. S. 416's 1891 registered	230%
U. S. 41/2's 1891 coupon 1111/6	211%
U. S. 4's 1907 registered110%	110%
U. S. 4's 1907 coupon	330%
U. S. Currency 6's 1895	-
U. S. Currency 6s 1896127	and the same of
U. S. Currency 6s 1897 198	quant.
U. S. Currency 6s r898	-
U. S. Currency 6s 1899 139	entert.

of active stocks:

	Atlantic and Pacific Telegraph 401/4	Aske
•	Alton and Terre Haute	31
	16 16 Pref 99	-
		8
	American District Telegraph 73%	74
	Rurlington and Quincy	63
_	Burlington and Cedar R. and N 67	68
D	Colorado Contanta Iron 34	26
-	Col., Chic. and Indiana Central 81	81
9	Unesapeake and Onio	20
o	" ad Prof 21	27
t	Chinago and Alton	X39
	Pref 140	845
	Caribon	67
Ċ	Caribou. 2 ½ Climax. ½ Denver and Rio Grande	3
В	Denver and Rio Grande 74	74
9	Delaware Lack and Western	98
	Deadwood 12	87
)	Excelsion Mining	14
	Excelsior Mining	33
,	1 Pario 44 Va	44
	Express Adams 118% Wells, Fargo & Co	119
	4 American 6.1/	114 64
b	" United States 52	6.3
٠	** American	42 89
l	" Pref 89	
•		33
Ē	Houston and Texas. 72 Illinois Central. 118	75 118
	Iron Mountain 50%	52
į	Iron Mountain. 50% Keokuk and Des Moines. 8 "Pref. 30	12
į	Little Pittsburgh	36
	Little Pittsburgh 22/ Louisville and Nashville 70/ Michigan Central 081/ Marietta and Cincinnati Pref. 7/4 Nort Gas 2d Pref 4/5	171
	Michigan Central1081/	108
	Marietta and Cincinnati Pref 7%	8
6	Mont Class	43
	Mont. Gas 20 New York Central 1363	34 1305
	Nashville and Chattanooga. 60 Ontario and Western 241/4	61
	Ontario and Western 241/4	253
	Oregon Navigation1271/2	139
	Ontario Silver         3a           Pacific Mail         47%           Pittsburgh, Titusville & Buffalo         33%           Reading         48%	34 473
	Pittsburgh, Titusville & Buffalo 331/2	2.4
	Reading 4858	483
	ROCK ISIANG12172	1225
	Standard	263
	San Francisco 41	42
1	San Francisco	53
		805
	Texas and Pacific	353 94
1	Wabash	45
1	" Pref 78%	29
1	Ohio	363
1	Texas and Facine   33   1   1   1   1   1   1   1   1	8o a8
1	Chicago, St. Louis and New Orleans 40%	403
I	Peo., Dec. and Evans 27	45%
1	St. Paul and Omaha	45%
I	Mobile and Ohio 35%	853
1	Central Pacific 82 1/4	83
I	Int. and Great Northern 44	46
ı	MINING STOCKS.	
ı	The following were the closing quote	ations

	The	follo	wing	were	the c	losing	quo	tat	ion
)	of the	New	York	Mini	ng St	ock E			
ı							Bid.	As	ked
	Amie.						. 52		S
	Buckey	re					. 19		21
d	Bonana	a C					27		28
	Calave	ras					. 28		30
ı.	Califor	nia					1.90		
М	Climax						53		54
	Consoli								3.70
١)	Consoli	dated	Imper	rial			18		21
1	Chryso								634
	Dahlon								X 1
1	Findley						30		34
. 1	Great I	Caster	0				56		57
1	Gold P	lacer.					70		
1	Goodsh	aw					56		
1	G. Prize	8					1.65		1.90
1	Granvil	le					- 8		9
1	Hukill.						1.70		8.75
1	Lacross	10					29		3.8
9	Leadvil	le					47		50
1	L. Chie	f					1.00		
1	Moose.						54		57
1	Maybel	le					16		90
1	Plumas						1.15		
1	Rappal	an					24		25
1	R. Sun						1.80		1.90
1	S. B di	0					0		30
1	S. Hite						68		70
1	Silver (	CHO					2.60		2.90
1	Tuscare	ora					10		2.8
1	Unadill						15	4	3.6

# GENERAL HARDWARE.

Notwithstanding the excitement attending the elections, and the fact that business was almost entirely suspended yesterday the volume of trade for the week under review is remarkably good for this season of the year, and few complaints in regard to dullness are heard.

On the 28th ultimo the manufacturers of

will be glad to learn that he is to remain in

the cutlery business We have received from the secretary of the Clothes Wringer Mfrs. Association, the

"The Clothes Wringer Manufacturers Association of the United States, held its regular quarterly meeting at the Grand Hotel in Cincinnati on Wednesday, October The following members of the as-27th. ciation were represented :

Bailey Wringing Machine Co. Metropolitan Manufacturing Co. Simpson & Gault. Eureka Wringer Co

#### IRON.

American Pig.-The feeling in the Iron trade since the result of the Presidential election became known shows a decided improvement, as compared with the doubt and uncertainty which has prevailed for a long time, and for some brands an advance of \$1 @ \$1.50 per ton over last week's prices is asked. The only sale of importance which has come to our notice is 1000 tons 2 X eight months show the ensuing movement: Thomas to-day at \$21. We quote Foundry No. 1, \$25 @ \$26; Foundry No. 2, \$21; Gray Forge, \$20.

Scotch Pig.-The market is quiet and we have not heard of any large transactions been ; during the week. We quote: Eglinton, \$21.50; Coltness, \$23.50 @ \$24; Glengarnock, \$23, and Gartsherrie, \$22 @ \$22.50.

Rails.-In this market no new business is reported and we repeat former quotations, viz.: Steel, \$59 @ \$63, and Iron, \$46 @ \$48.

Old Rails.—There is considerable inquiry for Old Rails, and a sale is reported of 1000 tons D. H. to be shipped from Europe to an American port at a price said to be equiva-lent to \$29.50. The price of spot lots is somewhat higher than the figures quoted in our last, and we quote holders' views, \$27 @ \$28 for Ts and D. H. respectively.

quoted \$26 @ \$27.

# METALS.

Copper.-A better feeling has manifested itself during the week, 300,000 pounds Lake Superior being taken for short delivery at 10¢, which is the closing figure. A better business is expected, with improved prices. There is no change in London. Chili Bors continue to be quoted at £61. 10/, and Best If there is no change in London. Chili Bers belowed and Carriage Rivets in M. packages, and Block and Carriage Rivets in C. packages, discount 50 per cent., instead of 40 per cent., as formerly; Iron Rivets, in bulk or per pound, and Burrs, discount 30 per cent., formerly discount 20 per cent.

Wellensak's Patent Transom Lifters are now quoted discount 35 per cent., formerly discount 20 per cent.

The demand for Nails is fair, but we do not happen to be the week. The tone of the market is weak, prices are decidedly irregular, and it is difficult to name the actual figure at which a cash buyer for a round lot could place an order. We quote rod, to fod, \$2.90, net, but fair-sized orders could be placed at a connected with the John Russell Cutlery

There is no change in London. Chili Bers been continued at £61. 10/, and Best Selected, £66. 10/. The latest anil advices Selected, £66. 10/. The latest anil advices the condition of thin:s would be anything but pleasant for the Coal men. The Western trade, below continues heavy and continuous consumption must of the companies are almost out of the Eastern barket by reason of their Western trade, be condition of thin:s would be anything but pleasant for the Coal men. The Western trade, be condition of thin:s would be anything but pleasant for the Coal men. The Western trade, below continues heavy and continuous consumption must of the condition of thin:s would be anything but pleasant for the Coal men. The Western trade, below condition of thin:s would be anything but pleasant for the Coal men. The Western trade, below condition of thin:s would be anything but pleasant for the Coal men. The Western trade, below condition of thin:s would be anything but pleasant for the Coal men. The Western trade, below condition of thin:s would be anything but pleasant for the Coal men. The Western trade, but pleasant for the Coal men. The Western trade, the condition of thin:s would be anything but pleasant for the Coal men. The Western trade, the condition of thin:swell but pleasant Capt. C. W. Elwell, for the past 15 years connected with the John Russell Cutlery Company, has made an engagement with the Lamson & Goodnow Manufacturing Company. The captain is well and favor.

Liverpool. The Di-monthly returns of Calilan and Boilvian produce in first and second hands in Liverpool and Swansea are, on the whole, satisfactory, the stock being rather the Lamson & Goodnow Manufacturing less than at the beginning of the month, and some are selling at \$3.80. (a) \$3.85. Though it is said that the beginning of the month, and some are selling at \$3.70. The circular control are selling at \$3.70. The Company will be self-in the the Lamson & Goodnow Manufacturing less than at the beginning of the month, and less than at the beginning of the month, and is estimated 33,032 tons on the 15th inst., addy known to the hardware and cutlery against 33,584 tons on the 30th ult. The trade of the country, and his old friends will be glad to learn that he is to remain in month were light, being only 511 tons, month were light, being only 511 tons, against 1620 tons for the same time last year. The deliveries, however, compare unfavorably, being 1063 tons, against 3429 tons. According to the Board of Trade retons. following notice of their late meeting in turns the imports for the first nine months of this year are about the same as those for the corresponding period of 1879, being 72,807 tons, against 72,588 tons, whereas the exports for the same time have been 46,011 tons, against 49,970 tons." Manufactures remain as under: Bottoms, 31¢; Braziers, according to size, 28¢ @ 34¢; Circles, 31¢ @ 34¢; Segment Sheets, 31¢; Fire-box Sheets, 28¢; Sheathing, 26¢; and Bolt Copper, 28¢.

Tin.-During the past week our market Eureka Wringer Co.
Empire Wringer Co.
Coloy Wringer Co.
F. F. Adams & Co., (Limited).

"It was determined at the meeting, by unanimous vote, on account of the high price of rubber, which has again advanced, contrary to general expectations, that the prices of Wringers as established at the

The following were the closing quotations of active stocks:

| July meeting, viz., \$60 per dozen for Cog Wheel Wringers, common size, and \$54 per dozen for Cog Wheel Wringers, common size, and \$54 per dozen for Friction (no Cog Wheel) Wringers, common size, and \$54 per dozen for Friction (no Cog Wheel) Wringers, common size, and \$54 per dozen for Friction (no Cog Wheel) Wringers, common size, and \$54 per dozen for Friction (no Cog Wheel) Wringers, common size, and \$54 per dozen for Friction (no Cog Wheel) Wringers, common size, and \$54 per dozen for Friction (no Cog Wheel) Wringers, common size, and \$54 per dozen for Cog United States were 900 tons, and to England at the same time 900 Misse, pkgs., 9 Misse, pkgs., 9 Misse, pkgs., 9 Misse, pkgs., 8 Tounsid & Chain, lengths, 5 Field Alfred & Co. Arms. 68., 9 Misse, pkgs., 9 Misse, pkgs., 9 Misse, pkgs., 8 Tounsid & Chain lengths, 5 Field Alfred & Co. Arms. 68., 9 Misse, pkgs., 9 Misse, pkgs., 9 Misse, pkgs., 8 Tounsid & Chain lengths, 5 Field Alfred & Co. Arms. 68., 9 Misse, pkgs., 9 Misse, pkgs., 9 Misse, pkgs., 8 Tounsid & Chain lengths, 5 Field Alfred & Co. Arms. 68., 9 Misse, pkgs., 9 Misse, pkgs., 9 Misse, pkgs., 8 Tounsid & Chain lengths, 5 Field Alfred & Co. Arms. 68., 9 Misse, pkgs., 9 Misse, pkgs., 9 Misse, pkgs., 8 Tounsid & Chain lengths, 5 Field Alfred & Co. Arms. 68., 9 Misse, pkgs., 9 Misse, pkgs., 9 Misse, pkgs., 9 Misse, pkgs., 8 Tounsid & Chain lengths, 5 Field Alfred & Co. Arms. 68., 9 Misse, pkgs., 9 Misse, pkg

In infringing machines."

The demand for foreign Hardware continues active, especially so in fine Table and Pocket Cutlery and Scissors. Heavy goods, such as Anvils and Vises, are also in fair request. No changes in values are reported.

BRITISH IRON MARKET.

[Special Report by Cable to The Iron Age.]

London, Wednesday, November 3, 1880.

Scotch Pig.—The market remains quiet, with firmer prices. There is no change in quotations, and we repeat last week's prices:

Gartsnerric — 62/

Cottoses — 63/

Glengarnock — 56/
Eginton — There is no change in the onolition of the market, prices remaining weak, with small transactions. We quote Best Staffordshire Bars, £7, 10/.

Steel Rails.—The market is active and prices firmer. Ordinary sections are quoted & 62 & 61 of.

Iron Rails.—There is a better feeling in the market, and prices are steady under an improved demand. A fair business habeen done. We quote Welsh, £5 & £5.5/

Old Rails.—Sales have been fair durative, the parket is active than they have been for some little time past, in the condition of the market is active and prices are steady under an improved demand. A fair business habeen done. We quote Welsh, £5 & £5.5/

Old Rails.—Sales have been fair durative, the parket is active and prices are steady under an improved demand. A fair business habeen done. We quote Welsh, £5 & £5.5/

Old Rails.—Sales have been fair durative, the weak and prices are steady under an improved demand. A fair business habeen done. We quote Welsh, £5 & £5.5/

Old Rails.—Sales have been fair durative, the weak and prices are steady under an improved demand. A fair business habeen done. We quote Welsh, £5 & £5.5/

Old Rails.—Sales have been fair durative, the weak and prices are steady under an improved demand. A fair business habeen done well and the proper continued to be with the protest. The first the market is active and prices are steady under an improved demand. A fair business habeen done. We quote Welsh, £5 & £5.5/

Old Rails.—Sales have been fair durative the proper continued t

improved demand. A fair business has been done. We quote Welsh, £5 @ £5. 5/.

Old Rails.—Sales have been fair during the week and prices are firmer. The offerings are light. Old Ts are quoted £3. 17/6.

Scrap.—Sales during the week have been large and prices are firmer. We quote Wrought, £3. 5/.

The stock, according to the last returns, was light, and as the deliveries in Holland are expected to be much larger than they have been for some little time past, it is thought not unlikely that the next statistics may again be very favorable, in which case higher prices would undoubtedly be demanded. Recent advices from America are also satisfactory, and tend to strengthen the idea that prices will further advance." Tin Plates.—An improved tone is noticeable in this article also, and the same is the case at Liverpool, where Coke

is noticeable in this article also, and the same is the case at Liverpool, where Coke Tin is bringing 15/6 @ 16/. We quote, at the close, large lots, ordinary brands, per box: Charcoal Bright, \$6.12½ @ \$6.25; ditto Ternes, \$5.37½ @ \$5.50; Coke Tin, \$5 @ \$5.12½; and ditto Ternes, \$4.87½.

Lead.—Sales sum up for the week 300 tons at 4.80¢ @ 4.85¢, and Common Domestic is at the close held at 4.80¢ @ 4.87½¢, while for Refined 5.12½¢ is asked. The Tons.

20,836 25,107 During the first nine months the ship-ments from London and Liverpool have

To Madras	458 167 8,235	1879. Tons, 260 310 596 4.710	1880. Tons, 57 183 362 5.451
Japan Singapore and Penang	854 96	351	192
Total		60	6

Manufactures are quoted as follows: Sheet Lead, 7¢; Lead Pipe, 6½¢; Tin-lined ditto, 15¢, and Block Tin Pipe, 40¢.

Spelter and Zinc.—The dullness here-ofore observable remains unbroken. Some lots Common Domestic Spelter are reported sold at 41/4¢. Sheet Zinc is worth 71/4¢.

@ \$28 for Ts and D. H. respectively.

Scrap.—There is very little doing in inquiry at the reduced rates ruling. We Scrap Iron. No. 1 Wrought from yard is quote: Hallet, 14¢ and Cookson, 15¢.

COAL. The excitement and disturbance of busi ness due to the election has been felt in the ness due to the election has been felt in the Coal trade, and most dealers report that a very small amount of business has been done. The tonnages are still heavy, and if it were not for the fact that two or three of the companies are almost out of the Eastern market by reason of their Western trade, the condition of things would be anything but pleasent for the Coal mon. The Western trade, little doing, apparently most of the mills, &c. have laid in their stocks.

There is to be no stoppage this month it appears, as the managers seem to think that the approach of cold weather will enable them to get rid of all the coal that they can mine, and thus they will avoid the necessity for a stoppage. The interruption caused by election week is looked upon as being equivalent to the loss of two or three days by many of the operators.

# IMPORTS

Of Hardware, Iron, Steel and Metals into the Port of New York, for the Week ending

Brown Bros. & Co.
Gal. wire, csks., 9
Iron wire, coil, 1
Steel wire, coils, 3338
Bruce G. W.
Case, t
Challoner F. G. & Co.
Safe door, cs., 1
Degraw, Aymer & Co.

Prosser, Thos. & Co.
Pieces, 200
Wrought iron rings,
bdils, 10
Pioneer Iron Works,
Mach y, pes., 2
Saager Bros.
Pig, 10ts. r
Stroud, W. B.
Hoop, bdils., 2130
Waeffelar & Duysters,
Casks, 125
Watenberg E.
Hoops, bales, 10
Werner Henry,
Spiegel, tons, 215
Casks, 200
Williamson Jas. & Co. Casks, 200 Williamson Jas. & Co. Pig, tons, 300

Order, Ferromanganese,

Ferromanganess, csks., 152
Bundles, 20
Hoops, bdls., 4206
Old iron wheels, 458
Oil barrel hoops, 3994
Ore, tons, 350
Fig., tons, 35
Sheet iron, bdls., 246
Spiegel iron, tons, 450
Wire rods, bdls. 1052
Cast iron, cs., 400

Steel.

Steel.

Abbott, J. & Co.
Bundles, 78
Cases, 40
Brown & Co.
Bundles, 233
Bars. 130
Cases, 7
Carey & Moen,
Wire rods, bdls, 28
Montgomery J. M.
Bundles, 3
Moss, F. W.
Bundles, 3
Bars, 700
Prosser, Thos. & Son,
Bands, cs., 84
Bundles, 43
Spring steel, bdls., 28
Bars, 26
Steel bands, 226
Locomotive tires, 16

Schoverling & Daly,
Arms, cs., 5s
Hulw, cs., 5
Struller, Lau & Co.
Cartridges, ce., 9
Talman S. S. & G. D.
Hdw., csk., 1
Thompson John,
Hdw., cs., 1
Wiebusch & Hilger
Hdw. Co.,
Mdsc., pkgs., 8
Windmuller L. & Roelker,
Arms, cs., 20
Mdse., pkgs., 3
Witteman Bros.
Corking machines. Lockwood
Bars, 10
Bundles, 113 Cases, 2 Cast steel tires, 24 Woodford, W. O. Bundles, 222 Bars, 23 Cases, 43

Order, Rods, bdls., 2847 Gases, 3 Rails, 5016 Spring, tons, 80 Bundles, 130 Pkgs., 31 Spring steel, kilos., 1-1,073

Witteman Bros.
Corking machines,
Corking machines,
Corker, 12
Cases, 22
Cutlery, cs., 1
Hdw., pkgs., 27
Mach'y, pcs., 39
Mach'y, pcs. and
pkgs., 14
Wire, drum, 1 Metals. Iron.

Metals.

Ashby Morris,
Zino, csks., 50

Brown, V. H. & Co.
Tin plates, bxs., 122

Brown Bros. & Co.
Tin, slabs., 450
Coddington, T. B. & Co.
Tin plates, bxs., 215

Henderson Bros.
Antimony, cks., 12

Jones & Loughlin,
Old copper, pkgs. 50

Lamarche H.
Zinc, csks., 271

McQuie, W. & A.
Old brass, bbls., 5

Moelling & Autenreith,
Tin, slabs, 205

Mosbacher & Co.
Old printing types,
CS., 2

Debugs Budges & Co. Bank of New York, Hoops, bdls, 5993 Baring Bros. & Co., Pig, tons, 200 Bars, 4077 Bundles, 696 Brown Bros. & Co. Bundles, Co.
Ore, tons, 850
Coddington T. B. & Co.
Sheet iron, bells., 101
Drexel, Morgan & Co.
Pig, tons, 95
Ore, tons, 1112½
Henderson Bros.
Pig tons, 150
Bars, 4458
Bundles, 458
Bundles, 631
Lundberg Gus,
Colls, 148
Bars, 5257
Bundles, 68
Moore J. B. & Co.
Wire rods, bdls., 270
Milliken & Smith,
Wire rods, 753
Nemegyei F.
Pieces, 12

Phelps, Dodge & Co.
Tin plates, bxs., 7398
Tin, bbls., 25
United States Stamping

United States Stamping
Co.
Tin plates, bxs., s25
Vatable H. A. & Son,
Scrap copper, bbis. 4
Scrap lead, bbis., 5
Order,
Tin plates, bxs., 1905
Tin, slabs, 147

# PHILADELPHIA.

Pig Iron.-The condition of the Iron

Office of The Iron Age, 220 South Fourth St., PHILADELPHIA, Nov. 2, 1880,

Pig 1ron.—The condition of the Iron market shows a marked improvement since the date of our last report. The irregularity and uncertainty mentioned for several weeks past, has given place to a very active demand and much firmness in prices. This condition of affairs, however, has not been unforeseen, and in fact it has been anticipated by the majority of business men. Heavy and continuous consumption must of necessity make an active market, and a few necessity make an active market, and a few tion of about 4,000,000 gross tons of Pig Iron. This, however, does not by any means represent the actual increase of consumption-Rails, Plates and other descrip tions of finished iron having been imported to the extent of about 400,000 tons. These figures are suggestive, and in view of the vast increase of production in Great Britain, without any corresponding outlet, leads to the opinion that any material advance is neither probable nor desirable, although a more active market seems to be con-fidently anticipated, and with that a more uniform range of prices. It is difficult to give quotations to-day. Sales, to a very large amount, have been made since last Wednesday; the furnaces are sold close up, and are not desirous of further business unless at some advance, and how much the advance is to be is not yet settled. A fair average of the market would be about \$18 for White Irons; \$19 for Mottled; \$20 for Gray; \$22 for No. 2 Foundry, and \$25 for No. 1. The heaviest sales last week were at prices about \$1 below the above quotation, although some for favorite brands were realizing about \$1 higher. The market is feverish and unsettled, but as we have stated, quotations of foreign Iron for the present stand in the way of any important advance, besides which must be remembered that finished Iron is relatively lower than the raw material, and

so far shows scarcely any sign of improvement. Under these circumstances it is not likely that prices of Pig Metal will vary much during the balance of the year from present rates, say, \$25 @ \$26 for best No. 1. Foundry, and \$20 @ \$21 for best Mill Irons. Sootch is steadier, and held at about \$21.50 for Felicited and see for Gartelowing Characteristics. for Eglinton and \$24 for Gartsherrie. Char coal Iron quiet at \$35 @ \$38.

Muck Bars. - The demand has been more active, but prices show no improve-ment. Sales to the extent of about 1200 tons have been reported at about \$38 at mill; in some cases slightly higher prices were paid, and in one instance, for a round lot, a lower figure was accepted. Higher prices seem probable, and a good quality is now difficult to secure at less than \$38.50 at

Plaams .- The demand is not very setive but holders are firm at the following figures Cold-Blast Charcoal Blooms, \$67.50 @ \$70 per ton of 2464 lbs.; Run-out Anthracite, \$57.50; Sunken Scrap Blooms, \$52.50 per ton of 2240 lbs.; and Northern Ore Blooms,

Structural Iron .- The demand has been quite active, and manufacturers find orders on their books steadily increasing. Sales have not been in large lots (with the exception of one of 1200 tons), but sufficiently numerous to fill the mills with work to the close of the year. There are more inquiries than usual, and everything seems to indi-cate a period of great activity. Prices are steady as last quoted : Angles, 2.6¢ @ 2.7¢ Beams and Channels, 3¢; Tees, 3.1¢ @ 3.2¢.

Plate and Tank Iron.-There is not much change in this department; a fair business has been done, and prices are firm. No large orders have been placed so far as we can learn, but a considerable amount has been done in lots for immediate consump-The mills are full of work, and it is difficult to make purchases, unless for de-livery next month or later. Skelp Iron has been sold to the extent of about 1000 tons; price is said to have been about 2.3¢, but manufacturers generally ask 2.4¢. Tank and Common Plate is quoted 2.75¢ @ 2.87½¢; C. No. 1, 3.3¢; C. H. No 1, 3.5¢; Flange Iron, 4¾¢ @ 5¢; Fire Box, 5¾¢ @ 6¢.

Sheet Iron.-Business has been rather quiet for some days, but stocks have been so much reduced that manufacturers are kept busy on orders. The season is now pretty well over, and sales are likely to show some falling off, although some expect an active demand up to the close of the year. Prices are unchanged, and, for small lots, may be quoted:

Common Sheet, No. 26 to 28
Common Sheet, No. 22 to 254/26
Common Sheet, No. 16 to 214%
Best Refined 1/4 @ 1/4 advance on the above.
Best Bloom Sheets. No. 26 to 28 754¢
Best Bloom Sheets, No. 22 to 25 ¢
Best Bloom Sheets, No. 16 to 21
Common Red Plates, 3-16 to 16
Blue Annealed, 3-16 to 16
Best Bloom Galvanized, discount30 %
Second quality discount

Bar Iron.-The demand during the week has been fairly active, but not sufficient to influence prices, which are still very unsatis-factory to manufacturers. With the advance in Pig Iron some improvement in the price of finished Iron seems to be inevitable. Manufacturers have not more than cleared first cost for some time past, and at the present rates for raw Iron, it is said there ould be positive loss in turning it into bars so that some improvement in prices is confidently expected. Consumption of Bars continues on an unprecedented scale; and there can be no doubt that heavy purchases will be a constant necessity. The dullness complained of by manufacturers is almost certain, therefore, to give place to permanent activity. Prices of finished Iron ought to improve, also, because it is relatively cheaper than Pig Iron, while with it there is much less danger of competition from abroad. Sales during the week have usually been at about 2.3 to 2.35, and 2.4 nominal may probably within a few days become an inside

Steel Rails .- The market gives evidence of further improvement, and it would be more difficult to place orders to-day than it was a week ago. Sales during the past ten days amount to about 20,000 tons, divided among Pennsylvania manufacturers, at prices from \$60 at mill to something lower, according to time of delivery. English rails would cost nominally about the same as American rails, but they cannot be sold would cost nominally about the same as American rails, but they cannot be sold unless at \$2 to \$3 per ton less money. Several reasons are given for this discrepancy, chiefly, however, because of the difficulty in regard to deliveries. It is not always possible to secure freight room at the time desired, but on arrival they must be received, regardless of huyars' convenience. ceived, regardless of buyers' convenience.

The contracts are made with American yet below our inside quotation, \$2.65. mills, deliveries may be delayed for a while if found desirable, or under reverse circummills, deliveries may be delayed for a while if found desirable, or under reverse circumstances may occasionally be hurried somewhat. Freights to points of delivery can also be arranged ensier, and on better terms too, than when the goods are of foreign manufacture. Then the mills are located at various points, each one having special advantages in competing for orders from roads in their immediate vieinity. This is in some in their immediate vieinity. This is in some pressed condition of the Oil parket. various points, each one having special advantages in competing for orders from roads in their immediate vicinity. This is in some measure neutralized when seaboard deliveries are required, which, however, are liveries are required, which, however, are comparatively infrequent. Then there is the difficulty of enforcing contracts with parties at a distance, especially when there is but little probability of permanency in business relations between the parties. These and other causes appear to make a difference of \$2 to \$3 per ton, and unless foreign rails can be laid down at \$55 @ \$57.50, American manufacturers will probably be able to maintain their prices as

product an absolute necessity, so that it is likely that bottom prices have been reached for this year. Other sales are under negotiation and likely to be closed in course of a

Old Rails .- We have at last to report Old Rails.—We have at last to report a decided improvement in this department, and numerous sales have been closed at steadily advancing prices. Holders ask \$27 (@ \$27.50, but all the sales we can verify have been at \$25.75, \$26, \$26.25, and a small lot at \$26.50. If buyers follow the market, or, in other words, if purchases continue to be made, higher prices will follow, as holders are firm and quite indifferent about decreases firm and quite indifferent about decreases. rs are firm and quite indifferent about do ing business, unless on their own terms Everything now depends on the demand. If buyers can wait, prices may not advance; but it is quite certain that the same amount of business the coming week would lead to a further sharp advance in prices.

Scrap Iron.-The market is unsettled but prices are higher. Sales have been quite heavy, and prices realized from \$26 to \$27 for Wrought up to \$29 for Railroad Scrap; Machinery, about \$20; and Stove Plate, \$16.

#### PITTSBURGH.

Office of The Iron Age, 77 Fourth Avenue, PITTSBURGH, PA., Nov. 2, 1880.

There has been very little change in general business during the past week, but if the result of the election to-day turns out as it is expected it will, we look for a decided aprovement in manufacturing circles at acc. It is well known that large orders have been held back to await the result of the Presidential issue. If the Republicans succeed it will be taken for granted that there will be no change in the policy of the government, that the tariff and finances will not be disturbed; while, on the other hand, if the Democrats should be successful there would certainly be a lull for a time. until it was determined what their course would be. This is the feeling among manufacturers generally here, and no doubt it is general throughout the country.

Pig Iron.-There has been no important features developed during the past week; while the demand continues to be a hand-to-mouth character, there is a fair business in the aggregate. In some respects the situa-tion is unsatisfactory, but it is nearly always so. Consumers complain that the raw article is higher relatively than the products while furnacemen claim that at current prices their margin for profit is small, and many of them intimate that in the event of As noted in our report of last week, the arrivals continue liberal, mainly from the West, some of which is being placed on former contracts and some into sale yards. It is rumored that one commission firm is to receive a consignment of 6000 tons, to be held for a more active market and better prices. The receipts from the East have fallen off considerably within the past week or two, while those from the West are in creasing. Forge Irons may be fairly quoted as follows: Cold-short, \$20 @ \$21, 4 mos. Neutral, \$22 @ \$23; cinder-mixture Red short, \$23.50 @ \$24.50; all-ore ditto, \$25 @ \$26; Bessemer, \$27 @ \$28; Foundry grades, \$23 @ \$26 for Nos. 2 and 1; Eastern Cold-blast Charcoal, \$38 @ \$40; Hanging Rock ditto, \$43 @ \$45.

Manufactured Iron.-The market is manufactured 1708.—The market is generally reported in an unsettled and un-satisfactory condition. Prices remain about as last quoted, while some manufacturers claim that they are refusing to sell under 2.25¢ rates for bars, 60 days, with 2 % off for cash; rumors prevail of sales as low as Ior cash; rumors prevail of sales as low as 2.10¢ and 2.15¢. Sheet Iron is quoted at 4¢ @ 4.10¢ for No. 24, but we are reliably informed that sales are being made at 3.80¢ and 3.90¢, and we are of the opinion that the latter figures are nearer the market than the former. For Tank Iron the demand has fallen off considerably, but those mills having the facilities to make it are all busy working up former contracts. Some busy working up former contracts. Some of them are still sold considerably ahead. Skelp Iron is quoted at 2.25¢ @ 2.35¢, and Hoop at 3¢ @ 3.10¢. It is expected that some large contracts for bridge and archi-tectural Iron will be let before long, for while the work of construction is always very much curtailed during the winter season, it does not prevent the getting of the material in readiness.

Nails.-The market continues dull, as it

Wrought Iron Pipe.—The activity noted

re is busy working up former contracts. Best with Refined Cast Steel is quoted as firm at 11¢ there @ 12¢, Crucible Machinery at 6½¢ @ 7¢, er and Open-hearth do., 5¢ @ 51/2¢.

Railway Supplies.—Business continues such the same as noted in former reports, while prices remain unchanged: Spikes 2.65¢ @ 2.75¢, 30 days; Splice Bars, 2.25¢ Track Bolts, 31/2 @ 40, with Square and Hexagon Nuts. Steel Rails, in the absence of sales, quoted at \$60 @ \$65, according to

prices by dealers to consumers.

Window Glass .- While but few fresh orders are coming forward, manufacturers generally appear to be busy, and it is not ikely that there will be much piling up to do until next year. No change in card or

Coke.—There is an increasing demand and a more confident and firmer feeling, which may be attributed in part to the more encouraging Iron outlook, and operators generally appear to have about all they can do. Shipments are being made steadily, both East and West, and while the production is larger, estimated at 25,000 to 30, tons per week, there appears to be no cumulation. We continue to quote at \$ imulation. We continue to quote at \$1.40 \$1.50 per ton, for round lots, delivered ee on cars at ovens, and 15¢ @ 25¢ per ton additional for small foundry orders.

Coal.—There is a continued good demand, and it is likely to continue all winter; the consumption is large and increasing throughout the West and South, and prices are stiff, with a tendency to go higher. River navigation has been resumed, and some 8,000,000 bushels were started to the down-river markets on Sunday and Monday, mostly for Cincinnati and Louisville.

Petroleum.-There has been no important change in the situation during the past week. As regards the raw article, prices have fluctuated but little for two or three months, and while producers are still hopeful of being able soon to realize more remunerative rates, the prospect for their realization is not very encouraging. The great trouble is overproduction—estimated n round numbers at 65,000 to 70,000 barrels per day—and supply above ground unprecedented in the history of the trade. The producers' combination, which was talked of some time ago with considerable favor, appears to have been dropped, as we have heard nothing in regard to it for some time

#### CHATTANOOGA.

Office of The Iron Age, Market and 8th Sts., } CHATTANOOGA, NOV. 1, 1880.

Business in the metal market of the South has been rather quiet during the past week, and prices are somewhat weaker than be-fore. There has been no real falling off, but buyers are not anxious to invest at cur rent rates on most articles. This is accounted for by the absorption of the country in politics on the eve of the Presidential election, and a revival is expected much more marked in November than the one which followed the October elections. The weather has been cool and dry for the most part, the week closing cloudy and rainy. The streams

Pig Iron. - Foundry Irons continue Dealers are much behind their scarce. Dealers are much behind their orders. Mill Irons are weak and in light request, though not quotably lower. We quote same as last report: No. 1 Foundry, \$25 @ \$27; No. 2 Foundry, \$23 @ \$25; Gray Forge, \$20 @ \$22; White and Mottled, \$18 @ \$20; Car Wheel Metal, \$40 @ \$45.

Miscellaneous Articles.—Old Rails are

Miscellaneous Articles.—Old Rais are plenty and barely maintain the rates heretofore quoted. We continue to quote at \$22 @ \$26; Wrought Scrap, \$20 @ \$24; Cast, \$15 @ \$17; Old Wheels, \$28 @ \$30. Ores.-There has not been a perceptible change in Ores for some time. Nearly all the furnaces depending on the market are on supplies contracted for in 1879. We quote: 50 % Brown Hematite, per ton, \$2 @ \$2.75; Red Fossil, \$2 @ \$2.25.

Nails—Are strong at 3.25 rates; iscount on 200-keg lots and for cash.

Manufactured Iron.-Dealers here say nat Pittsburgh makers of Bar are cutting he Southern market. Birmingham, Ala., is bearing the price in Nashville and other leading mercantile points. We quote: Bar, weak at \$2.40 rates; Railroad Spikes, \$3; Track Bolts, \$4; Trestle Bolts, \$4.50; Fish Plate, \$2.50. Bar is stiff at quotation.

Coal.—We quote run of mine at \$1.65 @ \$1.75 at mills; Lump, 12¢ @ 15¢, at yard. Coke.-Furnace Coke, \$3 per ton at furace : Foundry, 10¢ @ 12¢ per bushel.

slightly strengthened and are quotable at \$52.50 for American makes, \$60 for foreign. Iron, \$48 @ \$50: Small T is firm at \$5 for 14 x 20 and \$10.25 Iron, \$48 @ \$50; Small T is firm at \$55. Southern mills are full of orders for 60 to 90

Lead.—We quote: Pig Lead, 41/2 @ 6 . Steel.-Plow Slabs, 3 in. and under, \$4.70; Black Diamond, ordinary sizes, 13¢.

# CLEVELAND.

NOVEMBER 1 .- The market during the past week for Pig Iron has shown further signs of activity, and sales aggregate several thousand tons at the inside prices noted in our last. It is only fair to state, however, that the majority of producers are holding for considerably higher prices than are now ruling. In most cases consumers would steel.—While the demand has fallen off onsiderably of late the mills generally are usy working up former contracts. Best befined Cast Steel is quoted as firm at 11¢ success, both consumer and producer look

for higher prices and large sales.

Owing to the recent severe storms upon the Lakes, t e receipts of Iron Ore at Lake Erie ports for the past week have been quite light, the total shipments from upper Lake ports being 9315 tons less for the week end-ing October 27th, than for the corresponding period in 1879. The inquiry from consumers is moderate and prices unchanged.

New England foun lries are in the same position, and must buy a good deal of Iron before the turn of the year. We quote New England foun lries are in the same pobefore the turn of the year. We quote American Pig Iron at \$25 @ \$26 for No. 1 X; \$20.50 @ \$21.50 for No. 2 X, and \$19 @ \$20.50 for Gray Forge. These prices are f. o. b. at the port of shipment. Small spot lots will ommand \$2 per ton higher. Freights on Pig Iron from New York to Boston are \$1.35 @ \$1.40 per ton. Foreign Pig is held here in some instances considerably above our quotations. The American agents of the Glengarnock Company are holding that brand at \$24 at all the American ports, but no buyers can be found at that figure. Coltness and Eglinton and other brands are also held out of the market in some instances. We quote \$21 @ \$22 for Eglinton; \$22 @ \$23 for Glensarnock and Gartsherrie, \$24 @ \$23 for Colengarnock and Gartsherrie, \$24 @ \$25 for Coltness and Langloan. We quote English Pig Iron at \$20 @ \$21 for No. 1 Clarence and \$18 @ \$20 for No. 3 ditto. Old Rails show no change, and we continue to quote \$28 @ \$30 for American, and \$25 @ \$27 for Foreign. Manufactured Iron is moving only in a moderate way. A good deal of stress appears to be laid on the election, and if business does not improve after it is over. there will be disappointment all around. Sales of Bar Iron during the week have been moderate in amount and at about last week's prices. But a good consumption is in pro-gress. Plate and Tank Iron are only fairly active, but Western manufacturers are very confident in regard to the future. They say prospects are good for an active winter's work, and better prices have been looked for, and a week ago were confidently predicted, but competition on new orders has been so close as to effectually prevent any real improvement. The mills are very full of work, however, and as shipbuilding is likely to become active during the winter a recovery from the recent decline is not improbable. Nails are weak, and though the For cash we nominal quotation of the companies remains unchanged, sales are being made at \$3 per unchanged, sales are being made at \$3 per cwt. and under. We quote Bars at \$2.35 for Best Refined, and \$2.20 for Common. We quote Norway and Swedish Iron at \$4.15 for Bars and \$5.15 for Shapes; Nails at \$3 @ \$3.15 per keg. Plates at \$7 for Tank, 3\%\$ for C. H. No. 1 Shell, and 4\%\$\$\phi\$\$ @ 5\$ for C. H. No. 1 Flange. Copper has ruled quiet and unchanged at 18\%\$\$\phi\$\$ @ 18\%\$\$ for Baltimore. Buyers are not yet disposed to operate with any degree of freedom. A moderate jobbing trade prevails at 19\phi\$\$ @ 20\phi\$ for Lake and trade prevails at 19¢@ 20¢ for Lake and 18½¢@ 19¢ for other brands. Foreign advices say: The comparatively moderate prices ruling, combined with the slightly more favorable statistical position of this metal, are the reasons why operators are again giving their attention to this market; but the heavy losses which were made dur-ing the first half of the year by the continuous drop which then occurred, may in a measure damp the ardor of operators, and deter them from entering again into large contracts. There has been no change in the contracts. There has been no change in the combination prices of Manufactured Copper. We quote: New Sheathing Copper 26¢; Braziers', 28¢, and Bolts, 28¢; Bottoms, 31¢; American Yellow Sheathing Metal, 17¢ @ 18¢; Yellow Metal Bolts, 20¢, and English Yellow Metal Sheathing, 14¢, in bond. Lead is steadier but quiet at 4%¢ for large lots. Smaller parcels sel from store at 5¼¢ @ 5½¢. The prices of manufactures are unchanged, as follows Bar,  $6\frac{1}{2}\phi$ ; Pipe,  $6\frac{1}{2}\phi$ ; Sheet,  $7\phi$ ; Tin-line-Pipe,  $15\phi$ ; Tin Pipe,  $40\phi$ ; all less  $10\frac{1}{2}$  to the trade. No. I Solder,  $11\frac{1}{2}\phi$ . Spelter continues slow of sale and we quote  $5\phi$  @  $5\frac{1}{2}\phi$ for Western, and  $4\frac{1}{4}$  \$\phi\$ \$\phi\$ \$\phi\$ for Remeited. Retail lots command \$\frac{1}{2}\$ \$\phi\$ above these figures. Tin shows very little change. The market cannot be quoted as otherwise than firm at 19\frac{1}{2}\$ \$\phi\$ \$\phi\$ 20\phi\$ for Straits; but the demand is t @ 20¢ for Straits; but the demand from Tin Plates are in fair demand from but trade at first hands light. Tin Plates are in fair demand from the retail trade, but trade at first hands is light. We quote large lots as follows: The Iron market shows no material change from last report. The demand continues Charcol Tin—Melyn grade at \$6.25 @ \$6.50 for I. C., and \$8.25 for crosses; Allaway grade at \$5.87½ @ \$6 for I. C., and \$7.50 @ \$7.75 for crosses. Charcoal Ternes at \$5.25 @ \$5.50 for Dean grade, I. C. I4 x 20, and \$11.60 \$11.50 for ditto ditto 20 x 28. Coke Tin at \$5 for B. V. grade I. C. Coke Ternes at \$5 for I4 x 20 and \$10.25 @ \$10.50 for 20 x 28.—Commercial Bulletin.

# LOUISVILLE.

no change. Things are very quiet, but some no change. Things are very quiet, but some very large sales are being booked. Manufacturers show no disposition to take the risk of the market, and promptly buy Iron to cover all contracts they make. Some few sales for future wants were made during last week. There is, however, no advance in prices, and on some grades slight concessions have been made. We quote for cash as follows: cash as follows . FOUNDRY IRONS.

	NO. I MAINSING MOCK, CHARCOM	28.00	CO2	20.0
ı	No. 2	27.00	0	nR a
ì	No. 1 Southern, Charcoal	34,00	a.	25.0
	No. 2	23.00	a	24.0
	No. 1 Hanging Rock, Stonecoal and		-	
	Coke	24.00	0	25.00
	No. s Hanging Rock, Stonecoal and			
	Coke	23.00	a	24.00
	No. 2 Southern, Stonecoal and Coke	24.00	0	25.00
	No. 2	22.00	0	23.00
ı	"American Scotch"	23.00	ILL.	24.00
	Silver Gray	22.00	00	24.00
l	Scotch	28.00	0	29.00
l	MILL IRONS.			
	No. 1 Stonecoal and Coke, Cold-short			
	and Neutral	27.00	m.	27 //
	No. 2 Stonecoal and Coke, Cold-short	20.00	w	88.50
	and Neutral		0	20 50
	No . Missouri and Indiana Dad show	26.00	63	200, 30

Scrap, \$27 @ \$28 % net ton; Old Car Axles that forge irons will move more freely after and Car Springs, \$33 @ \$35; Old Car election, since many mills in the West are wheels, \$32 @ \$34 % gross ton. These are, now known to be carrying very light supplies. There is also a general belief that Sellers seem timid about naming a very low figure, lest they be taken up for large amounts, for the consumption is unques-tionably large, and on the other hand buy-ers are afraid to stock up heavily lest there come the usual weakening in December. The future promises well, and there have been some large contracts let for building in the spring. We expect to give you definite quotations next week.

#### CINCINNATI.

NOVEMBER 1 .- Pig Iron .- Producers and consumers, it seems, are waiting "till after the election" before any considerable transactions will be closed; meantime there is the usual current business, orders for two to three or five car lots to meet pressing wants. Sales in the past week from this point may be quoted as follows:

No. 1 Hanging Rock Charcoal Foun-Softeners Rock Silver Gray

No. 2 Hanging Rock Silver Gray

"Softeners" 22.50 @ .... 22.00 @ .....

No reliable quotations can be made of the Hocking Valley or the Irons from Tennessee, Alabama and Georgia.

#### ST. LOUIS.

Messrs. Card & Hoffer, Pig Iron and Iron Ore Merchants, 417 Pine street, write us as follows, under date of October 30: Trade has been better this week than for some time past. Since it has become apparent to all observers that no agitation looking toward a change in the existing tariff will ensue after the election, confidence in the stability of the market has gradually been taking possession of buyers, and they to-day stand ready to buy for future, and undoubtedly after next week a brisk trade will commen

Los cusa we quote.		
HOT BLAST CHARCOAL.		
MissouriSouthern Hanging Rock	\$27.00 @ 26.00 @ 29.00 @	27.00
COKE AND COAL.	_	
Missouri. Southern. Ohio.	25.00 @ 25.00 @ 27.00 @	20.00
MILL IRONS.		
Cold-short	22.00 @ 25.00 @	
CAR WHEEL AND MALLEABLE	TRONS.	
Missouri Southern Ohio	30.00 @ 38.00 @ 40.00 @	40.00
oreNominal.		
Ore for fix	10.00 @ 6.50 @ no mark	7.50
The state of the s		

### BALTIMORE.

W. N. WYETH, Iron and Steel Merchant, 46 and 48 South Charles street, reports us the following, under date of November 1: Trade moves along slowly in its usual channel, with no perceptible change, either for the better or worse, which is incidental to

D-	both the times and season.
r,	Ref. Bar Iron, z to 6 by 1/4 to z 19 10 21/4 @ 21/4 " " z to 4/4 by z 1/4 to 2 19 20 21/4 @ 21/4
t-	" % to 2, Round
g	and Square Who ak a ak a ak a
é.	Hoop Iron, 11/2 wide and upward. " 21/4 @ 21/4
ń,	Band Iron, from 1% to 4 in, wide. " 3 @ 246
	Horse-shoe Iron
ll	CTOX THIS AT MINE ADDRESS
II	1379 (@1479¢
f	9 924
:	Cast Spring Steel
d	Perkins' Horse shoes, \$\text{R} keg of 100 lbs\$4.37\delta
6	
_	30 Q B 7 6
in.	Putnam Horse Nails 2 2 21 22 23 84 26#
¢	Globe Horse Nails B b 20 21 22 22 25
	Railroad Spikes 3 @ 21/6
	Less list discount to the trade.

R. C. HOFFMAN & Co., Iron and Commission Merchants, report the Pig Iron mar-ket as follows, under date of November 1: th product the firm arm soo The ber

tit an

part fair f. o.

Baltimore	Chai	rcoa	i w	n	ee	II.	L	0			
Virginia	C. B.					**				0	 38.00 @
Anthraci											
**											22.00 @
44	No.	3							 		20.00 (3
6.6	Mot	tled	an	đ.	W	h	it	0	 		18.00 @
Charcoal	C. B.	Blo	om	6.							63,00 @
56	6.5	12(11	oto								63.00 (

# RICHMOND.

Mr. ASA SNYDER, Iron Merchant and Fur-Messrs. Geo. H. Hull & Co., Commission Merchants, report to us as follows, under date of October 29: The market shows

November 1: Market firm at quotations. Sales continue active on small orders.

Scotch Pig Iron \$24.00 @ 27.00	a
American Scotch Pig Iron 28.00 @ 29.0	à
No. 1 26,00 @ 28.0	a
No. 2 21.00 @ 24.0	0
No. 3 90.00 @ 22.0	a
Mottled and White 10.00 (2) 20.00	
Virginia Charcoal Wheel Iron 36.00 2 40.00	0
Old Rails 25.00 2 28.00	
Wrought Scrap, No. 1 23.00 @ 24.00	3
Cast, Machinery Scrap 21 00 65 22 00	3
Richmond Refined Bar Iron 2.6 @	
Horse Shoes Tredegar	
Mule	ï
Old Dominion Nails 3.20	ċ
For lots of 200 kegs, 10¢ per keg less.	
and to see the second	

# Our English Letter.

Review of the British Iron, Steel, Metal and Hardware Trades.

(From our Regular Correspondent.) LONDON, ENG., October 18, 1880. THE IRON MARKET

ably be able to maintain their prices as above mentioned, say \$60 at mill.

Iron Rails.—There has been more inquiry during the past week, and sales to a larger amount than for some time past. One lot of 3000 tons, another of 2500 tons and numerous smaller lots, have been taken at prices commencing at \$40 up to \$51, according to the above mentioned was taken at about 50¢ per ton concession from the asking rate, but manufacturers are now firmer in their wanufacturers are now firmer in

the occurrence of the quarterly meetings for exchanges of views between the ironmasters themselves, as well as with their customers, have served to strengthen the previously latent ideas as to the good prospects of trade, or, perchance, actual inquiries and sales may have made such impressions certainties. Of the quarterly gatherings I need say nothing here; but will reserve my remarks thereon for a subsequent paragraph. Surveying the crude iron branches in a summarized field of vision, we cannot well avoid the conclusion that in almost every district of the country the production is rapidly and largely exceeding the positive consumptive requirements of buyers. In Scotland this is certainly the case, for there are III furblowing, with a weekly make 5000 to 6000 tons in excess of tully 5000 to 6000 tons in excess of home sales and shipments. The inevitable consequence of this state of things is that the stocks in Connal's warehouses, as well as makers' own yards, must continue to the stocks in Connal's warehouses, as well as makers' own yards, must continue to grow on the most expansive scale ever known in the history of the trade. Nothing will prevent this sequence but some early and enormous increase in the demand, of which there seems to be but a remote possibility. The local consumption is growing, it is true, but shipments are smaller and compare badly with those for the corresponding weeks of last year, when prices were 7/6 to 10/higher, and the production infinitely smaller. In the Cleveland district the furnaces are making more pig than at any previous period, and, what is more satisfactory, are selling about nine-tenths of the aggregate output. Stocks, however, are creeping up, although not to such an extent as to give cause, as yet, for uneasiness. The Baltic and other northern shipments are now in full force, but about a fortnight or three weeks will probably tide over their best period, as by that time the navigation will have been sus pended to many places for the winter. It is to be noted, however, that in Cleveland, as well as in Scotland, an exceedingly heavy tonnage of new iron ships has been ordered within the past fortnight—a circumstance which leads the plate makers, as well as the manufacturers of angles, bulbs and tees, rivets, ship nails, sheathing, and so forth, to anticipate a further substantial augmenta-tion of business. Some of these new contracts for materials have already been given out, while others are only delayed on count of the inability of the plate mills to deliver at any near specified date. I am credibly informed, indeed, that several of the Northern plate mills are already entirely contracted forward into March and April next. In the manufacture of these plates a considerable quantity of pig iron will be needed, and as the vessels grow upon the stocks they will need an immense variety of other iron and metal work, to say nothing of machinery. One swallow does not make the summer, I concede, but this item is one which will undoubtedly weigh in more respects than may seem likely on a first consideration. As regards the West Coast hematite branches, there is little that is new to record on the week. The majority of the furnaces are in constant and full occupa-tion—indeed there are good grounds for supposing that in several of the makers' yards stocks are accumulating—a fact which probably accounts for the tentative drop of 5/ or so observable in the open quotations for these brands. At the same time the order books are well filled, and the state of the rail trade is such as to leave room for little or no anxiety as to the course of business during the next few months. Through aces during the next tew months. Inrough-out the remainder of the country pig irons are a little weaker, say 2/6 to 5/per ton, and venders are inclined to push sales on what you people call private terms, which we interpret as being lower than the quoted market prices. To finished iron I need but allude, seeing that my notes as to the quarterly meetings cover that section pretty fully. In respect of iron rails, I hear of a few inquiries among the South Wales and Monmouthshire mills, mostly on account of lines in your Southern States and don for 24 w. g., packed; £17. 10/ for 26 the colonies. The prices offered are barely  $\pounds_5$  f. o. b., so that manufacturers are disinclined to close. At Cyfarthfa a few lots are being rolled, in fulfillment of arrange ments are on a smaller scale than those at ments entered into a few weeks ago, on terms somewhat better than those just named. The steel rail producers are also in receipt of numerous inquiries, many of which are being cabled almost daily to makers and brokers on this side. Several of these gentlemen, indeed, are now on your soil, and are understood to be working the ground over in a most industrious manner. Offers for lots of 5000, 10,000 and 15,000 local and at the same time last year. The production, too, is much greater, there being now 111 furnaces in blast, as against 89 a year ago. The stock in Connal's stores received an addition of 52 tons only last week, but the total is 474,817 tons, as compared with 338, 112 tons a year ago, and 415,625 tons at Christmas last. Imports from Cleveland do not augment to any appreciable extent; induction is worthy even of a specially distinguished death. ground over in a most industrious manner.

Offers for lots of 5000, 10,000 and 15,000 deed, to date this year there are 14,105 tons tons two or three times over for each quan- below the total for 1879 to same date. tity are floating about, but in no case, if I am correctly informed, is more than £6 f. am correctly informed, is more than £6 f.

o. b. put forward. At that limit the British
manufacturers are not eager to contract.

Some of the London brokers, however, have
taken orders at about this figure and have Some of the London brokers, however, have taken orders at about this figure, and have placed them out in Germany—with the Phœnix and Union Works, I believe. It is not probable that additional specifications could be taken anywhere under £6, or, percould be taken anywhere not having any the property of ket has been irregular, without, however, haps, £6. 2/6, the brokers not having any largelots in reserve, and the mills being fairly full of work. The possibilities of dephosphorization are much discussed, but as yet nothing definite is being done, the new plant of Bolckow, Vaughan & Co., at Eston, near Middlesboro' not having been started on common pig up to date. As illustrative of what may come about before long, one Sheffield firm have given their men notice Sheffield firm have given their men notice of a drop of 10 per cent. in wages all round. dull, with a limited business in the forencon of a drop of 10 per cent. in wages all round. Scrap iron continues greatly neglected, and very little indeed is being done on shipping account. Your call for old iron of a miscellaneous description is limited. Should it revive to any extent you may expect any quantity of "old stuff" from Europe, some of it such rubbish as broken up French sabres, rusty shipplates, dustbin refuse, old of it such rubbish as broken up French sabres, rusty shipplates, dustbin refuse, old gun barrels and the like. For old rails there has been a rather stronger call recently, partially on account of buyers in the United States, who appear desirous of obtaining fair samples of old T's at £3. 10/ to £3. 12/6 f. o. b. North of England or Welsh ports. The movement is not of moment and may probably die out again. Of these rails the stock

THE QUARTERLY MEETINGS

of last week were somewhat mediocre in character, and did not bring about the excitement which might possibly have been their accompaniment had not the alteration in prices been made known at the end of the week before. The first of the meetings was that held at Middlesbro' on the Tuesday. It was well attended, but the business done was mostly as regards crude iron, venders of which were firm and held out for full rates. The producers of angles, plates, bulbs, &c., were similarly optimistic, many of them having booked heavy lots within the few days immediately antecedent to the meeting. Plates were quoted at £6. 10/ @ £6. 12/6; Bars, £5. 10/, and Angles, £5. 12/6. At Wolverhampton, on Wednesyou in my last week's letter, and other kinds of finished iron in proportion. The Sheet Iron Manufacturers' Association fixed singles at £7. 10/; doubles, £9; trebles, £10. 10/, and 28 W. G., £11. The strip iron makers' attempted to organize an advance on extra sizes, but their action was not attended with any very significant success. The Lilleshall Company openly quoted prices £3. 5/ hot-blast and £4. 5/ cold-blast, showing a loss of about 5/ on the quarter, and sundry other smelters followed suit. This alteration, however, had been practically discounted during some weeks past. Out of 146 furnaces erected in South Staffordshire only 45 are in blast, and even that small number is more than is required. The Birmingham meeting on Thursday was much the same as the Wolverhampton gathering, save that it was better and more tonshire, Derbyshire and other pigs foreign to the district, in lots of 500 tons or thereto the district, in lots of 500 tons or thereabouts. In galvanized iron a fair business was done, and the manufacturers reported themselves well booked forward. Hoop iron 

5/ @ 10/ above ordinary prices' quot	ati	ons	1 5
EARL OF DUDLEY'S.	-		
	£	B.	d.
Ordinary bars	8	2	6
Single best	9	10	0
Double best	II	00	0
Treble best	23	00	0
Rivet iron, single best	10	10	0
Double	12	00	0
Treble	14	00	0
Angle iron, strips and hoops of the ordi-			
nary sizes are, lowest quality	8	12	6
Single best	IO	00	0
Double	XX	10	0
Treble	13	OI	0
T iron, according to quality, £9. 2/6, £10.			
10/. £12	34	00	0
For strips and hoops of % in., and not	- 4		
thinner than 20 w. glowest quality	0	12	6
Single best	2.1		0
Double	12	TO	0
Treble	14		0
3; in. of similar w. g, according to quality	-4	-	-
£10. 12/6, £12., £13. 10/	15	IO	0
MESSRS. BARROW'S.	- 4		-
Daws D D H		20	-
Bars, B. B. H		10	0
Best	9	00	0
Best best	9	00	0
Best best Best chain bars.	9 10 9	00	000
Best best Best chain bars. Best chain bars.	9 10 9	00	0000
Best best. Best best. Best best chain bars Best best chain bars Best charcoal bars.	9 10 9 10 16	00	00000
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Best	9 10 16 9 10	00 00 00 00 00 10	0000000
Best   Best best   Best chain bars   Best chain bars   Best charoal bars   Best charoal bars   Plate bars become from   £8 @ Angle iron from   £9, 10/ @ Rivet from	9 10 9 10 9	00 00 00 00 00 10 10	0000000
Best	9 10 16 9 10 9	00 00 00 00 10 10	000000000
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Best. Best best. Best best. Best chain bars. Best chain bars. Best charcoal bars. Plate bars become from £8 @ Angle iron from £9, 10/ @ Rivet iron B. B. H. plates Best boiler ditto Best best ditto. Sheets of 20 W. g.	9 10 16 9 10 9 10 11 9	00 00 00 00 10 10 10 10	00,0000000,00
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Best.  Best best.  Best chain bars.  Best chain bars.  Best chain bars.  Best charcoal bars.  Plate bars become from £8 @ Angle iron from £9, 10/ @ Rivet iron  B. B. H. plates  Best botiler ditto.  Best best ditto.  Sheets of 20 w. g.  21 to 24 w. g.  25 to 27 w. g.  Strips are.  Hoops.  £8, 15/ @	9 10 16 9 10 11 12 9 8 9	00 00 00 00 10 10 10 10 10 00 10	000000000000000000000000000000000000000
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Best	9 10 9 10 10 9 10 10 11 11 12 9 8 9	00 00 00 00 10 10 10 10 10 00 10	000000000000000000000000000000000000000
Best. Best best Best chain bars Best charcoal bars Plate bars become from £8 @ Angle iron from £9, 10/ @ Rivet iron B. B. H. plates Best boiler ditto Best best ditto Sheets of 20 w. g 21 to 24 w. g 25 to 27 w. g Strips are Hoops. Rods from £8, 15/ @ MESSRS, E. T. WRIGHT & BONS, WOLVERIA	9 10 9 10 10 10 11 12 9 8 9 MP	00 00 00 00 00 10 10 10 10 10 00 10 00 10	00000000000000000
Best. Best best Best chain bars. Plate bars become from	9 10 16 9 10 10 11 12 9 8 9 MP	00 00 00 00 00 10 10 10 10 10 00 10 10	000000000000000000

The Wright qualities are 10/ per ton lower. w. g.

SCOTCH PIG IRON

The Scotch shipments so far in 1880 amount to To-day the market was

ponding week	K OI 107	9.	AA 6 (	quote:	
				No. I.	No. 3.
G. M. B., at Gla	asgow				49/6
Gartsherrie, at	Glasgow			61/	53/
Coltness,	44			61/6	53/6
Summerlee,	0.6			57/6	50/
Langloan,	0.6			6x/	53/
Carnbroe,	6.6			54/6	52/
Calder, at Port					50/
Glengarnock, a	t Ardros				52/6
kglinton,	- 60				50/
Dalmellington,					50/
Shotts, at Leitl	n			01/6	53/6
				W 4	

is relatively satisfactory, as, although there are very few orders reaching us from the United States and Canada, the exports are improving to the Continent of Europe, and considerable deliveries are being made for the Mediterranean and elsewhere. This, the Mediterranean and elsewhere. This, tage may be gained in respect of the impor-coupled with the recent disorganization of the blast furnaces, which has prevented our the finished articles. Another reason is that ironmasters from making the customary proportion of special No. 1, has led to a hardening tendency, and Langloan, Coltness and similar qualities have been very steady, these two brands having advanced 1/ per ton this ago. week. We have also to report a most active business in all descriptions of manufactured iron required for shipbuilding purposes, plates and angles having been in great request. The forging and engineering establishments throughout the country are very full of work, the size of the steamers now being ordered, and the machinery connected therewith, requiring an unprecedentedly large weight of iron per vessel. The pipe founders are also receiving more inquiry, and the prospects for the home trade are of an encouraging nature, and give an assurance of a state of activity throughout the winter. There are now 110 furnaces in blast, and probably a few others may be put into operation during this month. The stocks in the hands of the storekeepers are now 474,926 tons, but the influx into store has recently become very much less, as G. M. B.'s are required for local consumption. The balances of No. 1 in the hands of the makers are moderate, and any symptom of buying for America would tell upon this market very quickly. There is a growing impression that the volume of trade is expanding in many directions, and it is anticipated that when the recent harvest is gathering, save that it was better and more influentially attended. The sales of crude irons were largely in respect of Northampable development of enterprise, which will greatly, but they must bow to the inevitable. affect the iron trade and allied industries in a very favorable manner, providing political an infinity of harm to the cause of British dislocations do not retard the improving tendency of commerce throughout the world."

is firm at the following approximate rates

All these prices are net cash, f. o. b. Tees. Of the 40,000 tons of pig exported from North of England ports during September, 12,670 tons went to Germany, 6655 tons to Holland, 4327 tons to France and 2850 tons to the United States. It would interest a good many persons here to know whether this iron sent to your ports was sold or whether it still lies in bond on your side.

WEST COAST HEMATITES

are nominally unchanged on the basis of the figures given in my last letter, but in reality are 2/6 to 5/ per ton lower. Of the 48 furnaces in the district 38 are in operation, each making 400 to 500 tons weekly. The production is well sold on present and forward deliveries. There are stocks in hand in some quarters, but these are for the most part held on account of speculators who pay the piper.'

YOUR ELECTIONS

have commanded a greatly increased share of public attention here since the date of my last communication, probably owing to the almost simultaneous publication of letters from the American correspondents of the English journals dealing fully with the issues raised. The manufacturing section of the British public has given especial attention to States, and they not unnaturally pray for the success of the party which may be sup-posed to be most favorable to the propaga-tion and practical embodiment of free-trade ideas as laid down by political economists of the British school. It is not at all plain, of course, that the Democrats would see fit to meddle with tariff matters in any particular degree, but there is just the chance that they might go on that line if successful— argal, the majority of persons in trade here wish them well. I am not aware that the more enthusiastic free traders here are taking any active part in your electioneering, unless the circulation of the Mongredien pamphlet by the Cobden Club peoguished death.

SIR HENRY BESSEMER, valiant knight and preux chevalier of the converter, has been very ill, but is, I am glad to say, now much better. He has for some time past suffered a good deal from sleeplessness when subjected to more than usual worry, in common, I am afraid, with hundreds of other professional and literary men, to whom insomnia is a dreadful Sir Henry Bessemer was much upset by the proceedings in connection with the presentation to him of the freedom of the city of London, and has since had au attack of congestion of the blood vessels of the brain, from which he is now recover-Left alone, he says, he is all right and comfortable in his astronomical studies. Amidst these, however, he has found time patent a new process of desiliconization. which may turn up trumps shortly.

TRADE ITEMS

from the leading provincial centers are not of high importance at the moment. I learn, however, that in almost all the principal manufacturing centers trade is improving. At Birmingham, as well as at Sheffield, this is decidedly the case, although the move-ment has so far been largely confined to the ighter industries. At Sheffield the heavier branches seem to be better engaged than the corresponding departments elsewherein the Midlands at all events—and pros-pects are decidedly brighter all round. One of the best employed trades at Birmingham is the gun branch, which is being largely 

probable is the fact that the augmented pressure and competition of modern times favors the establishment of new industries the production of iron of any given quality and of steel (of some quality or other) is nowadays carried on in five or six times as many counties as was the case 20 or 30 years ago. Bessemer steel is not a monopoly of Sheffield or of South Wales, but is produced in Scotland, as well as at Liverpool, at Barrow in common with Darlington and Middles-bro'. Iron, too, is no longer to be had only from South or North Staffordshire. Almost every county north of the Trent and west of Birmingham has its own iron works, and these naturally act as centers around which the manufacturers of the lighter goods have settled. Hence there is some reason for supposing it one of the possibilities of the future that Birmingham and Wolverhampton may find formidable rivals at home as As a matter of fact, that section of Birmingham-in common with other centers—which is of the go-between character is by many persons believed to be doomed already. The general tendency of all modern trading is in the direction of diall modern trading is in the direction of direct and unfettered transactions between the manufacturer and the retailer, without requiring the costly, and often mischievous, intervention of the merchants or factors. As the number of manufacturers grows, so does the keenness of their competition, consequently they must, of necessity, go direct to the man who sells to the ultimate consumers and stocks their goods for them locally. The factors don't relish the change greatly, but they must bow to the inevitable. In their day and generation they have done an infinity of harm to the cause of British manufactures by their policy of considering price first and quality not at all. For this they are now being called to account, and are sure to suffer the more as the British hardware tra'les become dispersed instead of settled in one or two large centers.

VALPARAISO, Aug. 29, 1880.—Copper.—The market opened weak early in the fortnight under review, and Lota sold at \$2,3.2 § quintal, but upon the receipt of more favorable European advices, prices improved, till toward the close \$2,1.2 § was paid. Sales, 17,67 quintals. Nitrate.—The Chamber of Deputies passed the government to limpove the receipt of more favorable European advices, prices improved, till toward the close \$2,1.2 § was paid. Sales, 17,67 quintals. Nitrate.—The Chamber of Deputies passed the government to the fortnight under review, and Lota sold at \$2,3.2 § quintal, but upon the receipt of more favorable European advices, prices improved, till toward the close \$2,1.2 § was paid. Sales, 17,67 quintals. Nitrate.—The Chamber of Deputies passed the government to the details have been light, but the Antofagasta Company have come forward with four cargoes. The government continues chartering vessels for quique, but we hear that as soon as the tax shall have been manufacturers by their policy of considering price in the details at the offer of quique, but we hear that as soon as the tax shall have been light, but the Antofagasta Company have come forward with four c of settled in one or two large centers.

### FOREIGN.

FRANCE.

PHANCE.

(Moniteur des Intercts Materiels.)

PARIS. Oct. 17, 1880. — Metals.—Business in general is now resuming its wonted fall briskness, Metals, however, lack activity. Copper has been inanimate here. We quote Chili Bars 160 @ 162.50 francs the 100 kilos.; Ingots and slabs, 165; Best Selected, 167.50, and pure Corocoro Ore, 165. Marseilles has been quiet; Spanish in slabs at 150; Red Tokat, 155; Refined Small Ingots, 162.50 Red Tokat, 155; Refined Small Ingots, 162.50 Red Tokat, 175. Tin has been unsettled here. We quote Banca, 237.50; Bolits, 190, and Yellow Metal Sheathing, 187.50; Filliton, 235; English, 232.50, and Straits and Australian, 227.50. Marseilles has remained steady, Banca at 235; Straits and Billiton, 230, and English, 240. Lead has been tending downward; we quote the same here 37.50 @ 38.50. Marseilles, on the contrary, is looking up; they quote 36 @ 37.50 and Manufactures, 42.50 @ 43. Spelfer.—The metal has been rather weak here at 44 @ 45; Marseilles is unaltered. Iron.—Producers have shown greater firmness, and at the North and in the Pas-de-Calais there is a better feeling. This sudden turn has caused a somewhat unexpected alacrity on the part of certain consumers to lay in a supply, after prolonged hesitation; the consequence is increased activity in some quarters in the interior, while here we do not perceive much of a change yet. Consumers in this city cannot yet satisfy themselves that a lasting revival is at hand. We quote Merchant Iron 17 francs, flooring ditto, 18 francs at the works; delivered here. 17.50 @ 18 75, and Three Millimeter Sheets, 22 @ 73. Coal.—This fuel has been getting on remarkably well, stimulated as the demand has been large; freight cars are getting to be scarce.

# BELGIUM.

BRUSSELS, Oct. 17, 1880.—Iron.—Great weakness has been spreading in the Belgian markets. Makers of architectural Iron, it is true, have got a fair amount of orders yet to be filled, but the activity in this branch does not suffice to keep the activity in this branch does not suffice to keep the activity that be decived by the some commands; one of them has got a contract for a locomotive per week for a year to come. Meanwhile both Fig Iron and Merchant litto have been nominally sustained; they are both, indeed, so low that they can hardly decline any further. The only tolerably lively demand we notice is for thin Sheet Iron; Common Sheets are neglected. Belgian Pig Iron is worth 5@ 6 francs per 100 kilos; English Affinage is delivered at Antwerp at 5.40 francs, and Moulage ditto at 5.80. Merchant Iron is obtainable at 12 francs; perhaps for a little less. Common Sheet sells at 16.50 @ 17 francs; thin at 25. The Cockerill Society carried the day with Steel Rails for Dutch account at 181.57 francs per ton; the Rhemish Steel Works tendered them at 26.59, and Krupp at 26.20. Coal is becoming more and more active from week to week, and, in some cases, better prices have been obtained. In the Liege basin the companies are all actively engaged in turning but Coal, and a lack of sufficient hands is even (Revue Universette.) ter prices have been obtained. In the Liege basin the companies are all actively engaged in turning out Coal, and a lack of sufficient hands is even perceptible in the locality. It would be difficult to procure good Coal for forges below 10 francs. At Charleroi and in the Borinage prices are also remarkably firm. All this is due to the approach of the winter season, of which we have just had a foretaste of rather cool and rainy weather.

# GERMANY.

HAMBUEGO, Oct. 14. 1880.—Iron.—Our Dortmund correspondent expresses himself for the week to the following effect: "There has been no change in the situation and no improvement; indeed, the aspect is far from being a satisfactory one. It is true one of the papers published in this vicinity speaks of large orders received from America for Steel Rails, &c., but nobody knows anything of it here, and the matter awalts confirmation. On the contrary, there is great quietude here and in the Siegen district. Both sellers and buyers are holding back, although the time is at hand when fall orders are usually received by our rolling mills and forges. Various adjudications are about to come off to-day and the next few days for Dutch account and the Prussian railroads, and the Upper Italian road will soon want a large lot of Steel Rails; the same also gave a Munich firm some locomotive orders. All these purchasers benefit our district more or less, but only a few firms receive such benefit; the district in general, with its large productive capacty, is little influenced thereby. Coal has at length become more active. Prices have not improved. The Datch do not buy quite as much as had been hoped, but after awhile activity will be general." Metals.—Lead has been firm here; English Pig at \$77.6 marks per 50 kilos.; do. Sheet. 17,50 @ 18; German Fig, \$15 @ \$15,50, and Spanish 19. Copper has been well sustained; 20. Spelter is firmer. We quote Banca, 9; Australian, \$8. @ 90; English, \$8. @ 92. Spelter is firmer. We quote the same on the spot and to arrive at \$8.2.5 @ 18.50, and Silesian Sheet Zinc, usual numbers, 23.10.

AUSTRIA.

quence of the competition going on among producers and dealers in underselling each other; the low prices thus established lead, it is true, to a large business, but producers are making no money. The municipality of Pesth has bought some large machinery for its water works, and the Hungarian Government railroad lines stand in need of steel rails, which will be procured from the rail rolling mill combination there. Iron has been dull and neglected; the tendency is a flat one, but prices are the same as last quoted, viz. Pig Iron, 50 florins per ton; Bessemer ditto, 55 @ 60; Grey, 52; Merchant Iron, 115 @ 125; Bobermian, 105 @ 110; Sheet Iron for locksmiths, 160 @ 180; ditto far roofing, 170 @ 190; for boilers, 170 @ 180; for tanks, 160 @ 175, and pillars, 122 @ 125 per ton at Vienna. Metals have been moderately active with but few fluctuations. We quote at the cl.se: Copper, 65 @ 80 florins, the 100 kilos; Tin, 108 @ 100; Lead, 20 @ 22; Spelter, 21 @ 22; Sheet Zinc No. 9, 26, 29; Brass, 40 @ 55; Nickel, 97 %, 4.50 florins per kilo; Blue Vitriol, 30; Green ditto, 4.80 @ 6; Zinc White, 35 @ 47 florins per 100 kilos.

HOLLAND.

(Koch & Viterboom.)

ROTTERDAM, October 19, 1880.—Tin.—A large business has been transacted during the week at higher prices, the last sales of Banca having been effected at 53.50 guilders, and of Billiton at 53 guilders the 50 kilos. Toward the close the demand continues, but holders ask 25 cents more, and even at this advance there are not many sellers. At the government sale of Billiton, which came off on the 12th linst, 13,000 piculs sold at 58.25 guilders per picul on an average.

### CHILL.

(Weber & Co.)

#### EAST INDIES.

(Gilfillan, Wood & Co.)

(Gilfillan, Wood & Co.)

Singapore, Sept. 12, 1880.—Tin.—In spite of unfavorable advices from London our market last week improved, owing to small supplies and cheap freights to New York. Altogether 200 tons were sold during the fortnight at \$5.50 & \$5.63% per picul. but at the close there are sellers but no buyers at \$4.650 per picul. The shipments to New York, so far this month, have been 23 tons and from Penang 166 tons, making the total for the first half of the month 35 tons. Freights.—There have been a good many arrivals, and several vessels close at hand are offered at current rates. The market has given way and the London rate for deadweight is 30% rates for other ports are likely to follow. There have been no charters for New York, and rates are unchanged. The Nancy Pendleton is not yet a full ship. The Star of the West has cleared for Boston, leaving the berth vacant. Exports of Tin to New York per steamer Norfolk, 926 piculs: per steamer Canton, 924 per Star of the West to Boston, 193; per Rohilla to New York, 294, and per Serapist to New York, 294, and 294.

(Schmidt, Kustermann & Co.)

(Schmidt, Kustermann & Co.)

PENANG. September 15, 1880.—Tin.—The market opened at \$26.80 per picul on the 1st instant, but has fluctuated a good deal since, and, after reaching \$25.60 on the 5th, it recovered to \$4.625. During the past few days better advices have reached us from the United States, leading to a firmer tone and to offers of \$26.50, which were refused by holders. Total sales sum up 4800 piculs, 1700 of which for Europe and America, and 3100 for India and China. Inporters, furthermore, consigned to Singapore and China 800 piculs. The stock in Bazar is 1200 piculs. Exchange has been weakening, closing at 3/9d. @ 3/8d. for 4 months' bank bills. weakening bank bills.

# LABOR AND WAGES.

The workingmen of the Union Rolling Mill, Chicago, to the number of about 50 struck work last week because of a refusal of the company to dismiss a non-union workman, whose place the members of the union desired filled by one of their number. As might be anticipated, the Union Rolling Mill could not, and would not, consent to such a domination by their employees. The strikers were induced to send for Mr. Jarret, of Pittsburgh, president of the Amalgamated Iron Workers' Association, to whom the difficulties were referred for adjustment. decision was to the effect that the men had been too hasty in their strike, and that as it was ill-advised, it was their duty to return to work. He also decided that the company had a perfect right to hire whomsoever they chose, be he union or non-union, and hence the objectionable workman could remain.
The only concession asked of the company was that they would reinstate the striking workmen in their old places, which was places, which was agreed to. It was also determined that the workmen should hereafter give two weeks notice of any future strike, so as not to imperil the company's interests by a sudden interruption of their business.

The strike at the Crescent Steel Works.

Pittsburgh, still continues.

Mr. P. M. Arthur, chief engineer of the International Association of Locomotive Engineers, stated, in an address at the recent annual meeting at Montreal, that at the close of the fiscal year of 1879 they had 1723 paying members; during the past year they lost 24 by death and 75 by forfeiture, but at the end of September of this year, the close of the year, they had 2203 members, an increase of 480. They had paid 21 claims during the year, amounting to \$36,000, and in the 13 years it had been established they had paid more than \$1,170,000 to the families of their deceased members

Z. L. White, formerly the mining correspondent of the Tribune, tells the following story which he heard in Colorado: A man living at Colorado Springs was desirous of making a sudden fortune, and employed an old miner to help discover mineral in the mountains about Pike's Peak. When they had their prospect hole all ready, they employed a mining expert to examine and re-port upon their property. He gave an elab-orate description of the geology of the coun-try surrounding the mine, and of the rock in which it was found, but when he came to discuss the origin of the pay ore, he

#### INDUSTRIAL ITEMS.

#### VERMONT.

The Fairbanks Scale Works at St. Johns bury are melting 30 tons of iron per day and are yet far behind their orders. Since 1880 came in they have averaged over one railroad track scale for each working day, aggregating more in these nine months than they have ever made before in a year. More spruce lumber has been used thus far this season (mainly for boxing scales) than all that was used last year. About 100,000 feet were purchased in the last month.

#### MASSACHUSETTS.

Sweetser & Merritt, of Brockton, machinists, manufacturers of boot and shoe machinery of all kinds, will, about Dec. 1st, move into the new bracket factory, having leased space oo x 36, two stories, and will

keep a general assortment of new and second hand machinery.

The Springfield Sewing Machine Company, of Springfield, have awarded the contract the second hand machine on Taylor street. The work is to be completed by December 15 at the latest. The building is of brick, and, including the basement, will be four stories high and 40 by 100 feet on the ground. It is to join the present building, and entrances from one to the other will be cut through the The contract price is about \$9000. O. Ames & Sons' shovel works at North

Reed & Brother, wholesale manufacturers of shoe tacks, at Brockton, are also making a superior steel shank of the best quality of a superior steel stank of the oet quanty of English steel, tempered by hand, thus giving a uniform temper the entire length of the shank. Thus every shank is warranted. They also make a specialty of brass nails. Week before last South Abington shipped away 821 boxes, 41 cases, and 90 kegs of tacks, nails, shanks and eyelets.

#### CONNECTICUT.

The Winstead Hoe Company have begun work in their new shop, running by steam power as the water supply is deficient.

#### NEW YORK.

The Ansonia Clock and Watch Company have decided to rebuild, on the old site, their South Brooklyn factory, which was burned

down recently.

A novel combination of the windmill and dash water-wheel is being shipped this week for Davis Bros., of Lima, on the Pacific Mail steamer Acapulco. Similar wheels have heretofore been sent from England, made of wood, but the manufacturer, A. J. Corcoran, of John street, in this instance has substituted cast iron for the more perishable material, and lifts the water with a much shorter leverage, thereby increasing the power. The capacity is 400 gallons a minute, regulated by movable buckets. The advantage, compared with a pump, arises from the ability to raise water containing a heavy sediment washed down by mountain streams, and valuable for its fertilizing properties, but which would speedily destroy valves in the ordinary pumping appara-Mr. Corcoran has just erected tower windmills for Messrs. Austin Corbin and Henry Havemeyer, at Babylon, L. I., and Mr. Hugh Auchincloss, at Rahway,

TenEyck & Laughlin's ax factory, Waterford, is about to receive an addition, to ac-commodate another hammer with its accom-

panying machinery.

The Crown Point Iron Company inform us that they intend to put up a set of three Siemens-Cowper-Cochrane stoves, 16 x 58, at their No. 2 furnace, as soon as the present blast is completed. They say that they are convinced, from the working of their No. 1 stack with these stoves, that they cannot afford to be without them at the

The Excelsior Manufacturing Company 61 North Second street, Brooklyn, É. D., are manufacturing the Wolf Patent Ice and Refrigerating Machine, for making ice and cooling air currents. This machine works by cooling air currents. This machine works by either hand or power, under low pressure, and with chemical solutions perfectly harmless in character. Messrs. Wood & Co. are proprietors of the works.

# NEW JERSEY.

At the works of John H. Dialogue, which is building for New Orleans parties will be ready for launching in two weeks. The finishing touches are being given to a compound engine towboat, intended for compound Mobile. Mr. Dialogue is making some extensive improvements to his establishment, which include a new shed over the iron boat tools, a molding loft, a paint shop and store-He is running two steam hammers, room. engaged on forgings for the American Dredging Company. The foundry of the Bergen Iron Works, at

South Amboy, is about ready for operations. The mason work of the new building is completed and the main structure inclosed.

# PENNSYLVANIA.

The Phoenix Iron Company are about to ship two iron viaducts to the Great Western Railway of Canada, and are delivering and erecting several small iron bridges for a leading railroad in Mexico.

Messrs. Keyser & Rix have erected new works at Frankford, Philadelphia, for the manufacture of novelty hardware.

C. A. Conde & Co., of Philadelphia, are

turning out a special line of machinery for electric lights. The demand for this class of work is rapidly increasing.

The Pennsylvania Railroad Company are building a large semicircular engine house for passenger locomotives, on the west side of their property below Spring Garden street bridge, Philadelphia, an immense mass below Spring Garden street bridge, Philadelphia, an immense mass of solid masonry forming the back walls of the building and the retaining wall of the street to the rear. At the sides of the pro-posed site, blasting is going on to remove the building and the retaining wall of the street to the rear. At the sides of the proposed site, blasting is going on to remove the rocks which obstruct the progress of the work are in the eastern part of Reading.

The Reading Hardware Company have the rocks which obstruct the progress of the work in those directions. The building will have nineteen tracks, and be capable of housing that number of engines, whose movements will be facilitated by a large size and construction trains are busily engines and construction trains are busily engines. housing that number of engines, whose this. The new building will be 40 x 73 feet in movements will be facilitated by a large size, and will be erected on the site of the

The Valley Iron Works, at Williamsport Pa., make a specialty of Gang, Mulay and Circular Saw Mills and Grist Mill Machinery. Mr. W. P. Riley is the superin-tendent, under whose management the works are kept pretty well employed.

Frank Dawson, Williamsport, has patented spring draft tug, intended to be attached to the traces of horses. It has two independent gum springs, completely inclosed in dent gum springs, completely inclosed in an iron case or barrel, so as to be fully pro-tected from dust, water, snow or ice. By the use of this spring tug, the team, in pull-ing is relieved from all sudden jerks and strains. By the pulling of the team the gum springs in the barrel are contracted or drawn together, in proportion to the resista-nce to be overcome, and the resistance ance to be overcome, and the resistance being thus equalized, the team and harness are greatly relieved from all sudden jars, jerks and strains. This spring can be used on all kinds of harness and in all kinds of hauling, but it is specially designed for street car horses and cart and dray horses. G. & H. Barnett, of the Black Diamond

File Works, have recently taken possession of their handsome new offices in Richmond street, Philadelphia. They will make a further addition to their works early in the oming year.

The Philadelphia Screw Co., Limited, are making a specialty of brass wood screws, for which they have a large demand. The addi-tion made to their works last spring is already fully utilized, and proves to be none Easton are turning out daily over 5000 too large for their increasing business.

The Baldwin Locomotive Works, during dozen shovels, and give employment to 500

last week, entered orders for about 100 first class locomotives. Thirty-two are for the Denver and Rio Grande Railway. Thirty for the Philadelphia and Reading, and twenty for the Chicago and North Western Railway Co. They are at the same time working on orders for Australia, Brazil, Pera, Cuba, Yutacan and Mexico, and for many leading roads in the United States.

Bender & Holman, Lancaster, have removed to a handsom: three-story building, erected for and specially adapted to the requirements of their business. They make a specialty of fan blowers, tire benders, iron railings, &c. Their Giant Tire Bender is having a large sale.

County, makes a specialty of wood-working machinery, and gives steady employment to 70 hands. He has recently sent machines to New Zealand and other British colonies, and expects to steadily increase his foreign trade. Mr. Houston has just been granted

Milspaugh Bros., Williamsport, are busy on general machine work, and do all kinds to order. They have nearly completed a new rotary pump, which has several new features and is likely to prove a success.

Rowley & Hermance, Williamsport, are doing a heavy business in all descriptions of wood-working machinery and supplies for spindles, all running in the Ellis patent journal box, of which they have the exclusive control. This machine has been sent to all parts of the country, and parties using it endorse it in the strongest terms of approval.

At a meeting of the Lehigh and Schuyl-At a meeting of the Lengh and Schuyl-kill coal exchanges, on the afternoon of the 29th ult., it was decided to make no change in prices during November.

The amount of coal transported by the Philadelphia and Reading Railroad Company Philadelphia and Reading Rainout Company for the present year to October 23, is 6,198,-092.01 tons; corresponding period last year, 7,206,600.10; decrease, 1,003,508. The amount taken down last week was 205,195 tons; corresponding week last year, 190,390

ons; increase, 14,805 tons.

Moselem Furnace has been cleaned out. The Moselem mines are again in full opera-

Mr. Henry Potts, Jr., of Pottstown, assignee, will sell at public sale, on Wednesday, November 17, at 12 o'clock noon, the assigned estate of the Chester Tube Works, at South Chester, Delaware County, William McManus & Co., proprietors. The property consists of the unexpired lease of 17 acres of land, on which are erected large brick and frame dwellings, used for the manufacture of boiler tubes and pipe, together with six steam engines and boilers, two lap welding machines and a variety of other valuable machinery, a lot of boiler tubes and pipe, &c. The real estate, lease and machinery is subject to a mortgage of Preparations are being made by E. W.

Coit, general manager, to introduce electric lights in the Reading Tube Works, Reading. The Empire Shaft of the Lehigh and The Empire State of the Lenigh and Wilkesbarre Coal Company, with a single shaft and breaker, shipped 358,457 tons of coal during the year, being 1382 tons for each day the breaker was run, and 7.46 tons per day to the miner and 1.66 per day to each employee. The number of miners was 185, and the total number of employees

The Berkshire Furnace was the first furnace in Berks County. It was located in Heidelberg township, and manufactured cannon balls during the Revolutionary war. The Ellis Keystone Agricultural Works, of Reading, whose capital stock is \$20,000, contemplate increasing the same to \$50,000, by the reorganization of the company with an increased number of stockholders. Their

The new glass works over in La Grange

turn-table in the center, already in its place of the well built for it

The Sawyer electric light is being tried at the Mercantile Library, Philadelphia.

The Mercantile Library, Philadelphia.

The sake will be erected on the site of the old one. The latter was only about half as large. The first story will be used as a politishing room, and new machinery will be transferred to the others.—Reading Eagle.

Workmen are engaged in lining the Belfont smoke stack, Ironton. It requires is also being repaired. The Hinge Factory font smoke stack, Ironton. The stack is also being repaired. Hobbs, Brockunier of the old one. The latter was only about half as large. The first story will be used as a politic ship of the old one. The latter was only about half as large. The first story will be used as a politic ship of the old one. The latter was only about half as large. The first story will be used as a politic ship of the old one. The latter was only about half as large. The first story will be used as a politic ship of the old one. The latter was only about half as large. The first story will be used as a politic ship of the old one. The latter was only about half as large. The first story will be used as a politic ship of the will be us

Ezra F. Landis, Lancaster, manufacturer of the Eclipse Fan Blower, is selling large numbers of them in all parts of the United States and Canada. He is also making shipments direct from his works and through the trade to Australia, Cuba, Mexico, South America, England and other foreign coun-Mr. Landis has invented and applied to his blower a lever attachment to be used instead of the crank, so that the fan can now be operated the same as the bellows. Either the crank or lever can be used, as may be most desired by the operator. Mr. Landis also manufactures an exhaust fan that can be used either with crank, lever er power, for the ventilation of mines of every description.

#### PITTSBURGH AND VICINITY.

The immense factory of McKee & Bros. Eighteenth street, Southside, is running very full now, employing between 30 and 40 shops. The third furnace was started up last week and is doing splendidly. It is the intention of the firm to build another gas furnace, as we stated some time ago, but they had to postpone it until a more convenient season that is, until the demand for their wares that is, and the demand for their wares slackens up somewhat. As it is, they have to keep their three furnaces going steadily to meet the current demand, while their books show a considerable number of old orders vet to be filled .- Pottery and Glass-

ware Reporter. We hear that Shoenberger & Co. have leased 10 puddling furnaces from Hussey, Howe & Co.

George Duncan & Sons, glass manufac-turers, Southside, are getting along very nicely at their fine new factory, all temporary difficulties in getting the gas furnace, oil glory holes and lehrs to operate satisfactorily having been overcome

We are requested to state by Messrs. Everson, Macrum & Co., that there is no truth in the statement that they are about to build an addition in the shape of a plate mill to their works on Second avenue

It is expected that the shipments of coal to ports down the river on the present rise vill exceed 7,000,000 bushels.

The employees of the Westinghouse Brake

Company commenced working at night on the 25th ult. Among the orders on the com-

railings, &c. Their Giant Tire Bender is having a large sale.

E. Brady, Lancaster, manufacturer of edge tools, is making a specialty of feed cutter knives, tobacco spears, &c. Business is reported brisk and the demand for these goods increasing.

Levi Houston, Montgomery, Lycoming Levi Houston, Montgomery, Lycoming & Wood & Son, for the sale of their Simpson Horner & Sons, coal merchants, have decided to retire from business as soon as they can dispose of all their coal property.
On Saturday they closed a contract with John A. Wood & Son, for the sale of their 40 barges, 12 coal boats, the towboat Ella and their yard at Vicksburg. As the property at Vicksburg has not yet been appraised, the exact amount to be paid is not definitely known, but it will approximate \$75,000. The transfer of the property will not be made until the first of January next. The firm have retired from the business of transporting coal, and under the name of Horner & Roberts, will continue to mine coal at their works in Elizabeth, and load boats and barges, which they will dispose of

The Steubenville Gazette prints the follow-During the iron excitement of 1869 and 1870 there was a company organized here under the name of the Mingo Furnace planing mills. They have recently had orders from Sweden, Central America and other foreign countries. Their sweepstakes planer and matcher is a new design, has solid forged steel head and steel matcher owners. The sweepstakes planer and matcher is a new design, has solid forged steel head and steel matcher owners afterward increased. two miles below this city, the new company commenced operations with a capital stock of \$170,000, which was afterward increased to \$255,000. Early in 1872 Mason Burt was elected president of the company and Geo. A Dean secretary. The statement of April 1, 1875, showed a loss of \$129,530.53; April, 1876, showed a loss of \$150,936.86. Reserving the liabilities a statement or advised to the liabilities a statement and credited. garding the liabilties a statement rendered garding the liabilities a statement rendered on the 1st of April, 1877, showed them to be \$283,387.34; April 1, 1878, \$280,091.96, and Mr. Dean assignee filed a statement in April, 1880, showing liabilities to be \$285,080.49. In 1878 an assignment was made to the secretary, Geo. A. Dean, and the furnace was sold to McGary, Clarke & Co., of Cleveland, for \$61,000, and is at present operated by them. The money received was secretary, Geo. A. Dean, and the furnace was sold to McGary, Clarke & Co., of Cleveland, for \$61,000, and is at present edge of the logs in size, squaring from 20 inches to 2 [cet, in five hours. The operation was persured by them. The money received was used, as far as possible, to liquidate the debts of the old company. Some weeks ago J. F. Dayton, Esq., of this city, was appointed referee, and claims in the shape of unpaid referee, and claims in the shape of unpaid the places during the present very contact of the second present very contact very contact very contact of the second present very contact very c Pittsburgh, Pa., \$24,000; Hornbrook & Co., \$9,000; Ohio and Pennsylvania Coal Company, \$9,000; Spur Mountain Iron Company, Mo., \$13,500; Cleveland Mining Company, \$13,000; H. C. Frick & Co., Pittsburgh, \$5000; Ohio Valley Bank, Wheeling, \$13, 000; Exchange Bank, Wheeling, \$7100, &c. The suit is brought by Nimick & Co., et al. against the original stockholders, who, under the constitution and statute large for constitution and statute laws of Ohio, are liable for twice the amount of stock subscribed. In this case a great many of them are, at this late date, insolvent, and it has been carefully estimated that not over \$70,000 could be made out of the solvent stock. About \$100,000 of the stock is held by Wheeling capitalists, one man represent-ing \$30,000. The stock in Steubenville is held W. H. Harding. by the following parties: \$3000; Ed. Dunn, \$3000; George Engle, \$1500; J. M. Potter, \$1500; David Simpson, \$3000, and J. A. Quidlin, \$3750. The case after passing before the referee will be taken

to the United States Court. The furnace of the New York and Ohio Iron and Steel Company is only waiting on coke to go into blast. The coke has probably arrived before this. The mill will start

-Ironton Register.

completed. The principal purpose of the company in erecting the stack is ultimately to make use of it in connection with Whit-

well ovens.

The Laughlin Mill keg factory at Martin's Ferry has been torn down and a foundation made preparatory to erecting a far larger and more commodious factory. We under-stand the change is being made on account of increased trade. Kegs are being manu-factured in the warehouse while the new factory is being erected.

Alice Furnace has banked up to await the

arrival of coke. Inquiries for bar are more lively at the Lawrence Mill, but it is hard to get off their product. The rate at which iron is now sold product. The rate at which from is now some here is 2.15. The mill department is running double now. The forge will stop off until after election, as the stock of muck bar is somewhat ahead of consumption.—Ironton Register.

Mr. John Roling, of Cincinnati, informs us that he has just shipped a large order for cotton seed oil tanks to a new firm in Alabama, and is now shipping a number of tanks to Indiana. He also recently shipped a large tank to a firm in Kentucky.

The Keystone Spike Works, of Alliance, manufactured about 1,500,000 thrashingmachine spikes this season, and report that, from present indications, their business will be much larger next season. They are

now putting in a new hammer.

Messrs. Brown, Bonnell & Co., of Youngstown, inform us that they intend putting up a new 15-ton pair of shears at their vorks

It is reported that arrangements are being made for the removal of the Niles Iron Company's mill to Haselton, a suburb of Youngs-

The Hoe Factory, Ironton, is running Messrs, F. Glemser & Co., of Cincinnati,

have, within a short time, completed a valuable little machine for slicing and grating vegetables, fruits, &c. This is a new specialty in the hardware line. It is called and Grating Machine." It is cannot the "Universal Fruit and Vegetable Slicing and Grating Machine." It is composed of a tapered iron hopper, or bucket, with two cone-shaped castings, one of which is constructed so as to receive four or more knives, and a similar-shaped cone constituting a grater, either of which may be put in the hopper for use in a few seconds. It grates raw or boiled potatoes, or any other vegeta-oles, very rapidly, and does the work well, without breaking or crushing the articles By the use of their patent notched knives French chips can be sliced with great facility and perfection. Two of these notched knives are inserted at intervals and between two straight knives. The hopper is so con-structed that a side feeder can be attached for slicing cucumbers, beets and other oblong vegetables. By this process these vegetables are sliced in an angular direction. The machine is operated by a crank with gearing, and performs its work very rapidly. It can be taken apart for cleaning without the use of tools, no screws being used in its construction. The hopper is galvanized inside, which prevents rusting or canker. It is very simple in construction, and has a large capacity for so small a machine. Since the machine was first introduced, which was during the Cincinnati Exposition, where it received a very favorable notice, the propri-eters have been quite busy in filling Their works are located at No. orders. 211 Wade street, but their present capacity not being equal to the demand for the slicers, they contemplate an early removal to a larger building.

At a recent trial of riding-saw machines made at Cincinnati, quite an interest was manifested by dealers and others. Riding-saws being quite a novelty as a hardware specialty, they are attracting the notice of Western dealers. The sawing machine known as the "Giant," manufactured by

barrels of flour per day, one third of which is being shipped to Atlanta, Ga., over the Cincinnati Southern Railroad via Chattanooga, and the other two-thirds are consumed in the city. Such has been the prejudice against Cincinnati brands of flour in the past, that it has, heretofore, enjoyed very little trade in that article made at The Millers' Exposition, held in Cincinnati last June, awarded several premiums for bread made from the Family" brand of flour from these mills, against 47 competitors of Western manufacture.

The authorities of the Shenandoah Valley Railroad have decided to put their workshops at Luray, Page County, provided the county will pay its subscription of \$200,000 immediately in its own negotiable bonds. The railroad company has employed Major Jed. Hotchkiss, of Staunton, to make a re-port of the mineral resources of the country along the proposed route of the road from Waynesboro' to Chattanooga, Tennessee. Waynesboro' to Chattanoga, Tennessee. Engineers are now surveying the line, which will probably follow the Blue Ridge and make no connection with the Atlantic, Mississippi and Ohio road. The track is now 25 miles from Waynesboro', and two engines and construction trains are busily

very successful.

The Hinge Factory, Wheeling, is being eroofed and overhauled, and the machinery also being repaired.

Hobbs, Brockunier & Co., Wheeling, have very successful.

The Hinge Factory, Wheeling, is being reroofed and overhauled, and the machinery

their new factory almost completed, and

expect to begin work in a few days.

The Wheeling News-Letter of the 23d says: The Central Glass Works recently made two large shipments of glassware to the heart of the European glass-manufacturing region.

#### ILLINOIS.

Some idea of the operations of the North Chicago Rolling Mill Co. can be obtained from the following: Thus far during 1880 they have employed constantly 4780 workmen; converted 197,000 tons of iron ore into pig metal and consumed 150,000 tons of coke. The output of their rail mills to date during 1830 has been 80 contents. date during 1880 has been 85,000 tons of steel rails and 47,000 tons of iron rails. Their new works on the Calumet River, in South Chicago, are being rapidly pushed toward completion. At these works there will be required 325,000 gross tons of iron ore and 400,000 net tons of coke per annum. The annual product of steel rails will be 150,000 gross tons, and when the works are in full operation 2000 men will be employed.

#### MISSOURI.

The Lindell Glass Company's Works, St. Louis, are kept in full operation, and the Mississippi Glass Works, same city, are also

The Age of Steel reports all the iron industries of St. Louis full of orders and busy.

The Morse compress, recently built at Allen's Fulton Iron Works for the St. Louis Cotton Compress Company, is being erected at the new establishment of the compress company, on the line of the Missouri Rail-road in St. Louis; and it is expected to be in order and ready for operation during the

#### KENTUCKY.

coming week.

Ashland Furnace made 57 tons 424 pounds of No. 1 iron one day week before last. Ashland is a 60-foot stack and is running on raw coal only

Iron Hills Furnace property is to be sold at Grayson, Monday, Nov. 8.

The Deer Lake Furnaces (one stone stack, The Deer Lake Furnaces (one some sames, now in blast, 8 x 47, and one iron shell, 9 x 47, out of blast) together with 8500 acres of land, has been bought by a new company, the Deer Lake Company. Mr. E. R. Hall, the treasurer, kindly informs us that the small furnace is now making 150 tons per small furnace is now making 150 tons per week first-class charcoal iron

### Breech-Loading Guns in England.

After a long and singularly obstinate struggle the authorities of the Woolwich Arsenal have been forced, by accumulating evidences in favor of breech-loading guns, evidences in layor or broods lost on, at to give up the muzzle-loading system, at least partially. They seem to be doing this with ill grace and in an unsatisfactory way, It can if the following testimony of the Times accepted as correct:
The public has been informed from time

to time of the determination of the authorities at Woolwich to keep themselves so far abreast of the progress of science as to provide breech-loading guns for the naval and military services. We have more than once expressed some fear that the country might find itself saddled by this determin-We have more than ation with the new and costly artillery, con-structed without any reference to the ordinary principles of mechanics, and we have urged that no new system of breech loading should be adopted on the recommendation of military artillerists alone, or until it had been examined and reported upon by persons conversant with metallurgy and with engineering. We learn that this commonengineering. We learn that this common-sense precaution has not been adopted, and that the Woolwich breech loaders have been made in a manner which has already led to known as the "Giant," manufactured by the Farmer's Manufacturing Co., of Cincinnati, sawed 8416 square inches of rolid birch direction at right angles to the bore of the gun, so as to be fixed more firmly by the signal failure. The breech block or stopreferee, and claims in the shape of unpaid notes, checks and drafts amounting to \$281,-769.19, have been coming in day after day from almost every direction. Among the creditors the following are the most prominent: Cleveland and Pittsburgh Railroad Company for freight, \$2000; Cumberland Towboat Company, \$20,000; Nimick & Co., Pittsburgh Pa. \$20,000; Nimick & Co., Pittsbu given over to a horse artillery battery at Exeter, and were taken into use for practice on Dartmoor. In one of them it was observed that the lever did not remain in the orizontal position when the gun was fired, but went back to an angle of 45 degrees or thereabouts, and, the gun being fired again, the lever returned to the vertical position, while the breech plug came out altogether, and went 25 yards to the rear. Fortunately, no one was injured; and the official explana-tion of the "accident" is that either the screw itself or the lever was too loosely fitted. The real explanation is, no doubt that the insertion of a plug in the axis of the gun is an essentially unmechanical contrivance when regard is had to the nature of the force to be resisted, and that this contrivance is certain to break down, some where or somehow, when subjected to any severe test. Contrivances of essentially the same kind have long ago been tried and abandoned, and in both the Krupp and the Whitworth breech-loaders the breech block slides in and out across the bore, and renders the place which it occupies, as it needs to be, the strongest part of the gun. It is per-haps possible to conceive in actual warfare positions in which it might be of advantage possess guns calculated to fire out at ends at once; but such positions would be only of exceptional occurrence, and it would be a grave practical error if the whole of our new armament were to be con-structed with reference to them. There seems to be some risk of this being done, for the "new Woolwich breech-loading system" has already been applied to five

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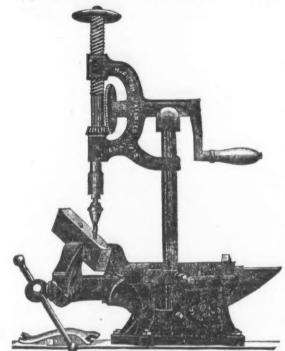
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B. & G. BROOKE'S "Anchor Brand" Nalls, Brads, BROWN & BRO'S Brass and Copper Wire Rivets, Spoons, &c. GAYLORD MANUFACTURING GO.'S Till, Chest and Cupboard Locks.

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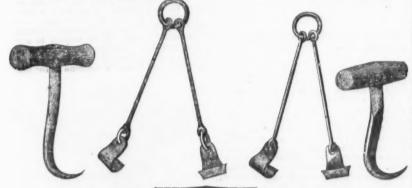
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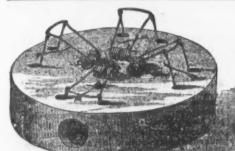
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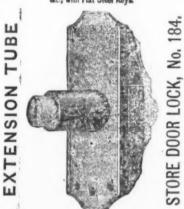
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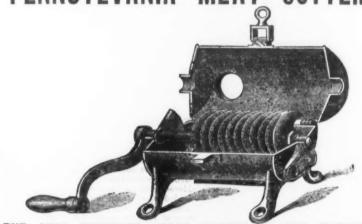
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39 Exchange St., Rochester, N. Y., Sole Agent. Canvassers Wanted.



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STEPHENS' AND ATTACHMENTS. Stationary and Swivel Bottoms.

Adapted to every variety of work, from jewelers to loco-motive works. Opens FURTHER, holds FIRMER & HEAVIER and MORE DURABLE than any other Vise, For sale by the Hardware trade, STEPHENS PAT. VISE CO., No 41 Dey Street, New York.

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ADJUSTABLE JAWS, Stationary & Patent Swivel Bottoms ADAPTED TO ALL KINDS OF VISE WORK. HALL MFG. CO., 23 DEY ST., NEW YORK.

Bend for Obroular.

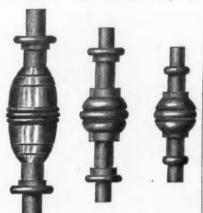
#### Cabinet Hardware.

Boule, the famous French cabinet maker, the inventor, or, at least, the first great designer in what is now erroneously called "Bulwork" (it should be Boule work), made conspicuous use of metal in the decoration of furniture, and he employed it in all cases with great advantage. Decorated metal



Cabinet Hardware. - Fig. 1. - Antique Drawer or Cabinet Ring-Handle (Full

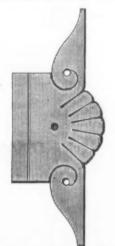
panels, gilt rails and gilt rods, and a variety of other forms of metal, were freely employed by him, and always with the best results from an artistic standpoint. At the present time metal trimmings and metal ernaments are very freely used in various connections. Metal forms a conspicuous



Cabinet Hardware.-Fig. 2.-Furniture

Age are especially interested.

of making hardware decorate the articles on which it was used. Specimens of work of this kind also attracted adapted. attention upon the samples of English and Continental cabinet work brought lish and Continental cabinet work brought into this country during the past few years, both by private individuals and enterprising dealers. When imitations came to be made here, or, rather, when cabinet work of this general character came to be manufactured by our home establishments, the first supply of trimmings was from the English manufacturers, but prices were a high that anything but the most were so high that anything but the most sparing use of the goods made the work too dear to sell. As soon as it became evident, however, that there was a real demand for goods of this character, American enterprise was equal to the task, and in a short time manufacturers on this side of the water were



Cabinet Hardware. - Fig. 5. - Hinge Plate (Full Size)

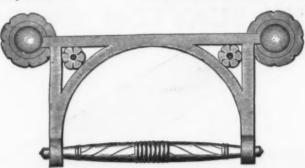
offering to the trade better designs and better workmanship than it had been possible to obtain in a foreign market.

The cost of English hardware of this gen-The cost of English hardware of this general description is almost too great for belief. The simplest articles are priced altogether out of proportion to their value, whether considered from the standpoint of the work expended upon them or from that of their artistic excellence. There are a variety of reasons for this condition of affairs, and a mention of them will show the superior ad-vantages enjoyed by American makers over the system of manufacture employed in England. There it is necessary for the workmen to have a considerable amount of Cabinet Hardware.—Fig. 2.—Furniture

Spindles (Full Size).

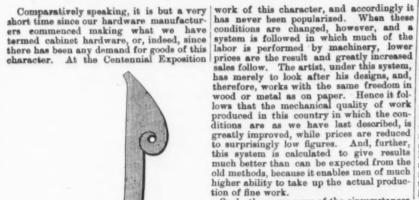
feature of cabinets and of all the finer specimens of fancy wood-work which are employed in decorating and embellishing modern houses. Since cabinet hardware is in such general request, it becomes a subject in which many of the readers of The Iron Age are especially interested.

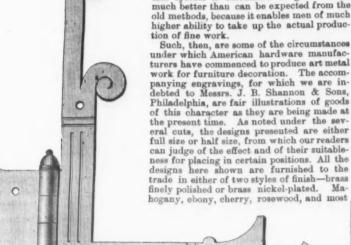
workmen to have a considerable amount of artistic skill in order that he may produce in a free-hand way, by means of the file and chasing tool, reasonably good work. Men of this degree of talent are necessarily high priced, and the amount of work which they can produce is limited; and these two conditions conspire to produce a third, which is high, prices. The result is that there is comparatively little demand in England for



Cabinet Hardware.—Fig. 3.—Drawer or Cabinet Handle (Full Size).

Comparatively speaking, it is but a very work of this character, and accordingly it bort time since our hardware manufacturians never been popularized. When these

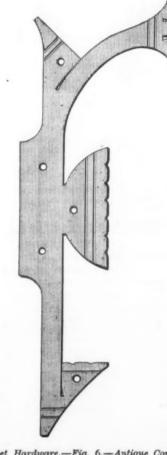




Cabinet Hardware .- Fig. 4 .- Corner Hinge Plate, with Hinge Attached (Half Size).

there were many samples of fine hardware of the dark and rich woods in use harmonize upon carved boxes and cabinets. In the well with polished brass or gilt metal. White Women's Pavilion there were some notable holly and maple will also bear gilt decorasamples, designed by the ladies who carved tion. aamples, designed by the ladies who carved tion. Silver, on many kinds of wood, has a the furniture. These were cast from original wax or wooden models, and to many and nickel-plate is, from an artistic stand-

very readily finds its way into the hole. Both of these methods were in ancient times employed quite effectively in decorating the



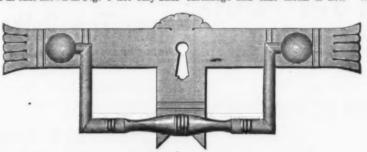
Cabinet Hardware. - Fig. 6. - Antique Corner Hinge-Plate (Half Size).

for ornament, examples of which are shown by Figs. 5 and 6. The first are more ex-pensive than the others, as the cost of makpensive than the others, as the cost of mar-ing a hinge with a large plate attached is greater than that of making an ordinary butt. Hence it is that in general use designs of the kind shown in Figs. 5 and 6, which are to be used in connection with the ordinary brass butts to be bought at any hard-ware store, are more popular than those of the kind shown in Fig. 4, which commonly are applied only to the more elaborate and expensive articles of cabinet work. In spite of the quarrel which the artistic people have with all sorts of shams, among which are included hinge plates of the kind we have just described as being in general use, we believe these plates have a good and sufficient excuse for being employed. Such a form as that shown in Fig. 6 not only adds

One of the most conspicuous articles of cabinet hardware in use is known as the hinge plate. Hinge plates are of two general kinds—those which are attached to the hinges, an example of which is shown in Fig. 4, and those which are put on simply

general character illustrated by Fig. 8 have a far different use. Such plates are intended a far different use. Such plates are intended for use upon locks which are never opened except when there is an abundance of light. Their use, therefore, is a double one—they defend the keyhole from wear, and they decorate the surface upon which they are placed. When they are finished in gilt they form beautiful contrasts with all kinds of dark wood. Figs. 7 and 8 illustrate keyhole escutcheons, in combination with very convenient drawer pulls. In both of these instances are illustrations of a small matter, attention to which renders the trimmings much more satisfactory ders the trimmings much more satisfactory for use than they would be otherwise. The rings or pulls have striking plates which prevent them from injuring the varnish or polish of the wood upon which they may be mounted. On this account the pull shown in Fig. 1 would not, in many situations, be as desirable as those to which we have just

referred.
Fig. 3 illustrates a style of handle which Fig. 3 illustrates a style of handle which is quite new in design, and is becoming exceedingly popular for more substantial reasons than ordinarily attach to the preferences for certain goods. The handle is provided with a stop, which prevents it passing inside a vertical line. It is unusually convenient in shape, while its general appearance is such as to recommend it for use. The drawer null shown in Fig. 10 is a very ance is such as to recommend it for use. The drawer pull shown in Fig. 10 is a very handsome design, whether finished in silver, nickel or gift. It is convenient in shape, and has also a striking plate for the pull, the advantages of which we have just recited. It is secured to the drawer or door upon which it may be used by a bolt and nut at the top and a screw at the bottom. In this connection it may be remarked that the convenience with which all these trimmings may be removed which all these trimmings may be removed from the furniture on which they are placed, greatly facilitates the process of cleaning and polishing which all such goods require at stated intervals, and also removes all danger to the wood incident to the act of cleaning.



Cabinet Hardware.-Fig. 7.-Drawer or Cabinet Handle, with Key Plate and Striking Plate (Full Size).

to the beauty of any door to which it is attached, but it also increases the strength of the door by bracing the rail and stile. Indeed, the primary object of the old metal workers in arranging hinge plates, and in some instances almost covering doors with them, was to secure the woodwork most effectually. Hence a plate of this character arrange a result of the conditional process of the strength of the same article, the metal should be fastened in such a way that shrinkage will not in any way loosen the metal or draw the wood away from it, so as to present unisightly gaps. To do this, it is only necessary to exercise a little care in devising the method by which the metal is to be attached. We have seen brass tripmed work boves in effectually. Hence a plate of this character serves a useful purpose, and is not to be considered as a decorative feature alone. We hold, therefore, that when a plate is applied separately which both strengthens and decorates a door, it is not in bad taste, even though it has no solid connection with the hings. On how covers, heavy doors, and in hinge. On box covers, heavy doors, and in



Cabinet Hardware.-Fig. 8.-Antique Escutcheon (Full Size).

all other places where there is a considerable strain, it is best, however, to incur the extra expense and employ plates to which hinges are attached, after the manner shown

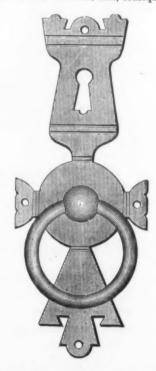
A keyhole is usually considered well fin-ished when it is provided with a flat metal escutcheon with a proper opening for the key. Much more than this, however, is really required, as the ancient hardware makers knew. There should be either a boss or a large depression, in order that in the dark the key may be readily guided into the lock. In the next place, if the boss is used there must be a depression in the center by which the key shall be guided into the keyhole without delay or difficulty. A keyhole with a slight rim is very annoying. The key encounters the rim at the last moment and slips too far or catches. If a deep who saw them were a revelation in the way point, almost identical with silver. From depression is used around the key, the key faithfully, G. H. Thompson."

fastened in such a way that shrinkage will not in any way loosen the metal or draw the wood away from it, so as to present unsightly gaps. To do this, it is only necessary to exercise a little care in devising the method by which the metal is to be attached. We have seen brass-trimmed work-boxes in which the greater portion of the brass was which the greater portion of the brass was secured by glue or cement. The least shrinkage would, of course, instantly sever the connection between the two, and once separated there was no chance of bringing them together again. On the other hand em together again. On the other hand when metal-work is secured by screws and the trimmings are laid on the surface, the shrinkage does not cause any defect and the metal remains secure to the end.

#### English Claims to the Invention of the Reaper.

The Engineer prints the following: Since the publication of the particulars respecting the inventor of the reaping machine in the Society of Arts Journal (Vol. xxvi.), Mr. G. H. Thompson has continued his inquiries on the subject, and now sends some turner corroboration of the claims of John Common. AIT. Inompson writes as follows: "Sir— Two years ago, you kindly inserted in your Journal some particulars respecting the invention of the reaping machine, and in support of the claim of Mr. John Common to that honor. I have been since then making further inquiries on the subject, and I think the inclosed communication, which I have just received from a descendant of the Mr. Thomas Brown who made parts of the ma-chine from Common's instructions, will strengthen that claim, and thus prove con-clusively that Mr. McCormick is not the inventor; nor is the machine American, but ventor; nor is the machine American, but wholly English. The dates given coincide with Common's statements in every way. (See Journal of Society of Arts, March 22d, April 5th and 26th, 1878.) Perhaps you can find space in your Journal for this further light on the matter, and oblige yours

The following is a copy of the letter alluded The following is a copy of the letter alluded to: "74 Brook street, Toronto, March 15th 1880. My dear Sir: Your favor of February 13th and copy of Almuick Journal are duly to hand. In reference to your inquiries regarding my grandfather, the late Thomas Brown, and his family, formerly of Almwick, I beg to say they emigrated to Quebec, Canada, and shortly after removed to the town of Sterling, Cayuga County, State of New York, United States, where he purchased a farm, and resided there until his death, in March, 1850. With respect to the invention of the reaping machine, all I know is what my grandfather, the late Thomas is what my grandfather, the late Thomas Brown, and his son Peter told me, which is that McCormick, who at that time resided at Auburn, some 20 to 30 miles south from Sterling, in the same county, having heard of my ing, in the same county, having heard of my grandfather, came to him and inquired about his reaping machine. He explained it to McCormick fully, and gave him a model of the machine (I never heard patterns mentioned). This was a few years (perhapsfive) before I came to see my grandfather, in 1848; I, therefore, never saw a pattern or model of the machine, and, consequently,



Cabinet Hardware.-Fig. 9.-Ring Handle for Cabinet or Drawer, with Key Plate and Striking Plate (Full Size).

can give you no information regarding it; nor did I ever hear the name of a Mr. Common mentioned. I have in my possession a scrap book belonging to my late grandfather, containing a controversy, or series of letters, published in the Newcastle Chronicle of Aucust 1801, between him and John Franch. containing a controversy, or series of letters, published in the Newcastle Chronicle of August, 1321, between him and John French, a blacksmith, regarding the invention of turnip seed drill, and herein I inclose you a copy of part of one of the letters, being the only mention made of the reaping machine. During my residence with my grandfather and uncle Peter, I had several conversations in regard to his inventions of the 'Northumberland iron plough,' 'seed drills,' 'to-bacco cutter,' 'turnip cutter,' 'tallow cutter,' 'fruit crusher,' &c., also his reaping machine, but nothing was ever elicited about the reaper but that McCormick, of Auburn, got the model and soon commenced manufacturing them. It is, therefore, beyond all doubt that McCormick got his first idea of the reaping machine from my late grandfather, Thomas Brown. Very truly yours, J. P. Nichol. Mr. G. H. Thompson, Alnwick." Extract from the Newcastle Chronicle, August 3, 1821: "With respect to my reaping machine, I can give Mr. F. the lie direct in every statement. I never received 30 guineas, and I made a machine fit for the



Cabinet Hardware.-Fig. 10.-Drawer or Cabinet Handle, with Striking Plate (Full

field. The Newcastle Chronicle of October 19, 1816, states that it was tried on October 3, 1816, in a field of wheat belonging to T. Dodds, Esq., south side, and far exceeded the expectation of every one who saw it work, and bids fair to give satisfaction; it will cut six or 7 acres a day, and much more even and low than by the sickle, &c. It was also tried before a number of gentlemen farmers at the barn-yards, and gave equal satisfaction. The laboring people reproached me with taking the bread out of their mouths, and I was induced to desist from (making) the machine, from the extreme opposition they showed to it.—THOMAS BROWN."

A gas well at St Pierre, Quebec County, Canada, is attracting some attention. A bell having a capacity of 675 feet, placed over the well, was filled in two hours, four-fifths of the area only being covered. On this basis the flow would be about 30,000 cubic fact par day. feet per day.

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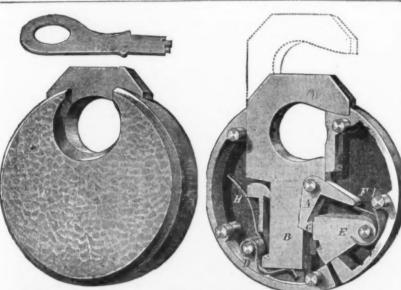
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WEYMOUTH'S PATENT.



This knife is the best in use for cutting down hay and straw in mov and stack, cutting fine feed from bale, cutting corn stalks for feed, cutting peat and ditching marshes

ting peat and ditching marshes.

The blade is best cast steel, spring temper, easily sharpened, and is giving universal satisfaction. A few moments' trial will show its merits, and parties once using it are unwilling to do without it. Its sales are fast increasing for exports as well as home trade, and it seems destined

to take the place of all other Hay Knives.

They are nicely packed in boxes, one dozen each, of 30 pounds weight suitable for shipping by land or water to any part of the world.

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East Wilton, Franklin Co., Maine.

For sale by the Hardware Trade generally.

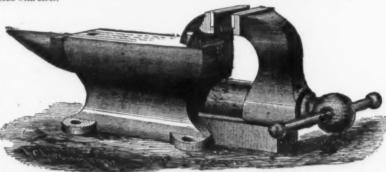
The Bicycle, as a permanent, practical road vehicle, is an acknowledged fact, and the thousands in daily use are constantly increasing in numbers. It combines speed and endurance that no horse can equal, and for pleasure or bealth is far superior to any other out-door sport. The art of riding is easily acquired, and the exercise is recommended by the medical profession as a means of renewing health and strength, as it brings into action almost every muscle of the body. Send 3-cent stamp for 24-page Illustrated Catalogue, containing price lists and full in-

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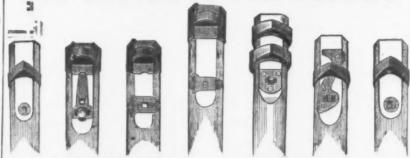
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American Prosperity.—In the total valuation of natural wealth the United States stands near the head of the list—third on the list of all western nations. The United Kingdom of Great Britain and Ireland heads the list with a capital valua-France with 36,700 millions, the United States with 32,000 millions, Germany with States with 32,000 millions, Germany with 22,000 millions, Russia with 15,000 millions, and the low countries with 11,150 million dollars of capital collectively. These are the valuations made by those countries of their entire resources. The average annual income per inhabitant in various countries, however, shows how rapidly the United States are coming to the front. The contries, however, shows how rapidly the united States are coming to the front. The average annual income in the United Kingdom is \$165; in the United States, \$165 also; in the low countries \$130; in France, \$125; in the British Colonies, \$90; in Germany, and also in Scandinavia, \$85. In this reckoning, Russia, with her 90 millions of needs in order of sight as yet; she will of people, is ont of sight as yet; she will not be so very long. Taking the question from another point of view, let us ask, What is our annual accumulation of wealth, as compared with the annual accumulation as compared with the annual accumulation of other nations? And here we step far in advance of any community which gives us full estimates. It should be borne in mind, however, that the rate of interest for agricultural capital with us is double the average rate for Europe. The annual accumulation of wealth, then, in Germany, is 200 millions of dollars; it is 325 millions in the United Kingdom, 375 millions in France; in the United States it is 825 millions! Our in the United States it is \$25 millions? Our increase of national wealth since 1850, says a good English authority, would be enough to purchase "the whole German Empire, with its farms, cities, banks, shipping, manufactures, &c. The annual accumulation has been \$25 millions of dollars, and therefore each decade adds more to the wealth of the United States thus the caniwealth of the United States than the capi-tal value of Italy or Spain. Every day that the sun rises upon the American people it sees an addition of \$2,300,000 to the wealth of the republic."

The Bollee Steam Coach .- A steam coach is attracting considerable attention in the streets of Berlin, where it has been ex-tensively experimented with. It is built ac-cording to the system of Bollée, an engineer from Le Mans, France, and in its present shape is intended for passenger service only.

It has but two pairs of wheels, of which
the back pair are the driving wheels, while
the front pair is under control of the
driver. The boiler is one of the Field type, driver. The boiler is one of the Field type, made of sheet copper, and capable of resisting a pressure of 150 lbs. per square inch. The boiler is mounted on a platform, upon which the engine proper is placed, and which the stoker occupies. The driver has an elevated position in the front of the carriage, and the reversing levers, steering gear and throttle valve lever are within easy reach of him. Between the two pairs of wheels is the body of the coach, capable of accommodating six passengers. It has been found by trial that this coach can make 12 miles per hour on good pavement, and 18 miles on an asphalt or macadamized road. miles on an asphalt or macadamized road. Though the promoters of the enterprise appear to be sanguine of success, there seems tittle hope that even in Germany the steam coach will conquer a place in modern means

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They are made of best steel, and their excellence has gained for them in this and foreign countries valua-ble medals and other awards and large sales Send for our new cir-cular and read the Eu-

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TREE PRUNER.

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Joshua Wilkinson & Sons,

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iid Wrought Steel-Faced Anvils, Solid Box Vises, Steel and Steel-Faced Smiths' and Stone Hammers.

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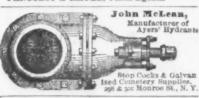
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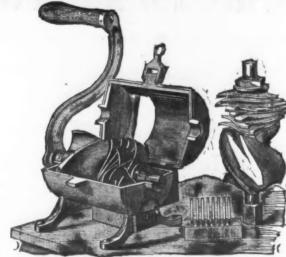
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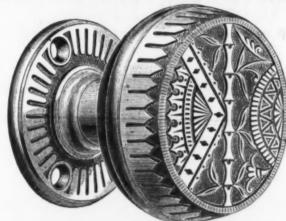
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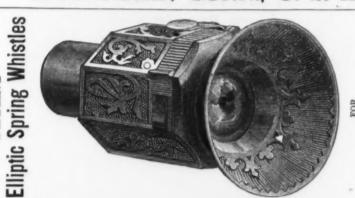
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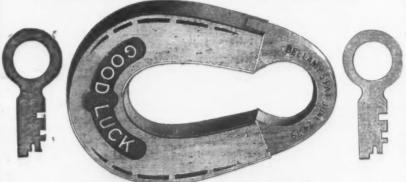
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Forepaugh Wm. F., Jr., & Bros., Philadelphia39 N. Y. Belting and Packing Co., 37 Park Row, N. Y13	Flint and Emery Paper and Clets.  Bacder, Adamson & Co., 730 Market, Phila
Peck & Bemis, Cleveland, O	Borges, Portable, &c. Buffalo Forge Co., Buffalo, N. Y
Pope Mfg. Co., of Summer, Boston	Empire Portable Forge Co., Cohoes, N. Y
Lindeman O. & Co., 254 Pearl, N. Y	Keystone Portable Forge Co., 2'8 Carter, Phil43 Forgings, Iron and Teel.
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The Chalmers-Spence Co., foot 9th St., E. R., N. Y. 40	Rurnaces, Makers of, Richmond & Potts, 119 S. 4th, Phila., Pa
Wale Cuttown	Furnace Hoists. Stokes & Parrish Philada, Pa. Furnace Shields. McDonald H. Pittsburgh, Pa. 42
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Upterrove W. E., foot Last Icel Se, N. S. S. Brass, Manufacturers of.  Ansonia Brass and Copper Co., 10 Cliff, N. Y. 2 Bridgeport Brass Co., Bridgeport Conb. 2 Brown & Hros, 8: Chambers, N. Y. 3 Davol John & Sons, 100 John, N. Y. 2 Holmes, Booth & Haydens, 49 Chambers, N. Y. 2 Manhattan Brass Co., 18t 8 & Sambers, N. Y. 2 Merchant & Co., 18t 8 C. S. Philes, N. Y. 3 Plume & Alvold Mig. Co., 50 Chambers, N. Y. 3 Plume & Alvold Mig. Co., 50 Chambers, N. Y. 3	Giass, Fox & Co., Durhamville, N. Y
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Dear Holas.  Ives Hobart B., New Haven, Ct	Britton Iron and Steel Co., Cleveland, Ohio
Tyee Hobert B., New Haven, Ct	Kirkpatrick & Co., Pittsburgh Pa
Thorne, De Haven & Co., Philadelphia	Lang W. Balley, to Beekman, N. Y. Logan Iron & Steel Co., Philadelphia, Pa. Norra Chicage Polling Mile
Drop Forgings. Merrill C. & Sons, 556 Grand, N. Y44	Feb. Mass/facturers of. Albany & Rensselaer Iron & Steet Co., Troy, N. Y. 36 Albentown Rolling Mill Co., Allentown, Pa

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1	lren, Charcoal. Warm or Cold Biast. Logan Iron & Steel Co., Philadelphia	PI
	Lundell, Chas. G. (Swedish), Boston, Mass	Pe
	Balley J. F. & Co., 52 Wall, N. Y. Heberton & Co., Philadelphia. 5 Lundell, Chas. G. Boston, Mass.	Pe
	Iron Commission Merchants	Pr
	Abeel Brothers, 190 South N. Y	Pr
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	Pullman J. Wesley, Philadelphia, Ps. 5 Quincy John W. 5 William, N. Y. 4 Richards D. W. & Co., 52 Mangin, N. Y. 4	H
	Swan John E. & Bros., Glasgow & Hiddlesbrough. b Wallace Wm. H. & Co. Albany and Washington Streets, N. T. Warmer A. R. & Son. & and to West. N. V.	R
-	Williamson James & Co., 69 Wall, N. 1 Wilson, R. A. & Co., Pittsburgh Pa. 4 Wnitney A. B., 48 Hudson, N. Y.	R
	Williamson James & Co., 50 Wall, N. 4 Wilson, R. A. & Co., Pittsburgh Pa. 4 Wilson, R. A. & Co., Pittsburgh Pa. 4 Wintney A. R., 68 Hudson, N. Y  Iron, Pig, Importer of. Clark E. W. & Co., Philadelphia, Pa. 5 Leo James & Co., 72 Pine, N. R. 4 Luudell, Chas. G. (Swedish), Boston, Hass Wheelser E. S. & Co., 54 Cliff, N. Y 4 Williamson James & Co., 69 Wall, N. Y. 4	000
	Lundell, Chas. G. (Swedish), Boston, Mass. 4 Wheeler E. S. & Co., 54 Cliff, N. Y	R
-	Wood W. D. & Co. Pittsburgh, Pa	R
-	Howard & Morse, 4s Fulton, N. Y	R
	Lanterns. Manufacturers of.  Dietz R. E., 5a aud 65 Fulton, N. Y	R
	Lathe Dogs. Color H. H. & Co., Philadelphia, Pa	Sa
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3	Forsath S. C. & Co., Manchester, N. H. 42 Garvin E. E. & Co. 139 Center, N. Y. 43 Johnson, Israel H. Jr., Philadelphia, Pa. 18	4
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	Ofam & Atherton. Cleveland, O	8
3	Stokes & Parrish, Philada. Pa.  The Stiles & Parrish Priess Co. Middletown, Ut	8
2	Little Chas. E., as Fulton, N. Y.	1 7
7	Machine Screws. Makers of. Fellows John, Williamsburg, N. Y	S
8	Blaisdell P. & Co., Worcester, Mass	SI
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5	ave. Philadelphia Pa. 44 J. Gray Machinery Depot, 37 Dey. N. Y. 30 Kins J. M. & Co. Waterford, N. Y. 60 Watersline C. W. & Co. J. Uban. 1	8
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707	washington sv., Phila. 77 Purves A. & Son, cor. Seuth and Penn, Phila. 79 Quincy J. W., 98 William, N. Y. Fand D. W. R. Co., 2014 Walnut, Phila. 79 Find D. W. R. Co., 2014 Walnut, Phila. 79 Find D. W. R. Co., 2014 Walnut, Phila. 79 Find D. W. R. Co., 2014 Walnut, Phila. 79 Find D. W. R. Co., 2014 Walnut, Phila. 79 Find D. W. R. Co., 2014 Walnut, Phila. 79 Find D. W. Co., 2014 Walnut, Phila. 70 Find D. W.	8
3 7	Metnis.  Dickerson, Van Dusen & Co., 29 and 31 Cliff. N. Y., 2 Goldsmith Moses & Son, Charleston, S. C., 3 Naylor & Co., 99 John, N. Y., 3 Northrop A. C., Waterbury, Conn. Pheips, Dodge & Co., Cliff, bet, John & Wilton, N. Y., 2 Phosphor Bronse Smelting Co., Mentled, 2038 Washington sv., Phila.  Purves A. & Son, cor. Seuth and Penn, Phila.  Quincy J. W., 68 William, N. Y., 3 Senonberg Metal Mig. Co., 26 25 25 25 26th, N. Y., 3 Starr John. Halifax, Nova Scotia.  Metale, Perforated Sheet.	B
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)	Lowe S. B., Chattanooga, Tenn	1
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	Enterprise Mfg. Co., Philadelphia	Thermometers. Oswego Thermot Tower L. C., Roc Tis Plate. Man U. S. Iron and Ti Tis Ware. Sia Block David, 69   Shepard Sidney Vogel William. I Tire Upsetters Little Glant Mg Tool Chests
		U. S. Iron and Ti
	Snah Locks, Universal Sash Lock Co., Albany, N. Y.	Block David, 69 I Shepard Sidney
	Saw Nets. Farr Asa, 64 College Place, N. Y	Vogel William,
	Boynton E. M., so Heekman, N. Y	American Tool (
	Farmers' Mfg. Co., Cincinnati, O	Tools. Steam a Armstrong F., B Saunders' Sons,
t	town. N. Y	Tran-portation
2	Buffalo Scale Co., Buffalo, N. Y	Tran-portation The Iron Line, 3 Tree Pruners. Lee E. S. & Co., 1
3	Rienle Bros. oth above Master, Phila	Trowers. Bruce Geo. W Try Squares, H Disston Henry &
-	Richié Bros., Philadelphia, Pa	
3	Philadelphia Screw Co., Philadelphia, Pa40 Screw Cutting Machinery. Wiley & Russell Mfg. Co., Greenfield, Mass40	Dudgeon Richar Tubes. Telesco R. J. Deakin, Phi
8	Wiley & Russell Mig. Co., Greenfield, Mass	Tubing.
3	Boardsley Scythe Co., West Winsted Conn.	Twist Drills, M Morse Twist Dril Uphoisterers' 6 Turner & Seymo
3	Fike A. F. Pike Station N. H.	Valves, Gas. W Ludiow Valve M
9	Seliers Wm. & Co., Phila, and m Liberty st., N. V.	Warnish.
2	Shears. Renz Hardware Co., Bridgeport, Conn	Berry Brothers.
t	Shears (Shees), Field Alfred & Co., 93 Chambers, N. Y	Hail Mfg. Co. 23 Howard Iron W. Millers Falls Co.
0 0 4	Hildick A. H., 12 Warren, N. Y	Miliers Falis Co. Stephens Patent Watchman's T
0	Shot, &c. Sparks Thos. W., rer Walnut, Philadelphia33	Weather Stripe
105	Short, &C. Sparks Thos. W., 121 Wainut, Philadelphia	Waichman's T Imhauser, E., 212 Weather Strips Valentine W. T., Wheels, Haitr Whitney A. & Sc Whetstoner
5	Clark & Co., 152 W. 27th, N. Y	Whetstones. Pike A. F., Pike: White Lead.
2	Hunter J. M. & Co., Cincinnati O	Brooklyn White Colgate Robert & Jewett John & S Lewis John T. &
á	Skates. Union Hardware Co., 87 Chambers, N. Y	Lewis John T. & Window Balan
0	Smelting Werks.  Philadelphia Smelting Co. 14th and Vable of	Window Balar Hugunin R. B. F Window Sprin Hammond W. S.
5	The same David C. of Court Process Williams	Wire, Manufact Cary & Moen. 224 Cleveland Rollin
3	Ross W. K., 97 Chambers, N. Y	Gautier Steel Co
2	Receves Faul o., 760 South Broad, Philis. 44  Ross W. K., 97 Chambers, N. Y. 27  Vermont Snath Co., Springfield, Vt. 19  Speaking Tubes. 19  Ostrander W. R., 19 Ann N. Y.	Gilbert & Benne Griswold J. Woo Harrison Wire C
2	Manning & Squier, 113 Liberty, N. Y	Howard & Morse Prentiss dec. W Perkins & Choat
5	Wright Peter & Sons, to Broadway, W. W.	Perkins & Choat Treuton Iron Co Washburn & Mo
3	Constitution Development of the control of the cont	Wire Goods, M Dufur & Co., 26 N E. T. Barnum's
9	Springs. Cary & Moen, 24 W. 29th. N. Y.	. Gilbert & Henne
5	Rowland Wm. & Harvey, Frankford, Phila	Wire Nails. American Wire Field A. & Sons. HP. Nail Co., Cle
5	Dienelt, Eisenhardt & Co., Philadelphia, Pa42 Dudgeon Richard Columbia N	Broderick & Bas
	Steam l'umps, &c., Manufacturers of.	New York Wir House, N. Y Rosoling's John
,	Brooklyn, N. Y. Crane Bros. Mg. Co. Chicago, III	Wrenches, Man
5	McGowan John H. & Co., Cincinnett, O	Bernis & Call Hd Coes A. G. & Co., Coes L. & Co., W Girard Wrench
	Valley Machine Co., Easthampton, Mass	Girard Wrench Wringers.
	Chester Steel Castings Co., 407 Liberty. Phila., Pa 44 Eureka Cast Steel Co., Chester, Pa.	Wringers. Alexander T. J Metropolitan Mf Peerless Wringe
	Holmes, Booth & Haydens, 40 Chambers, N. Y. 22:11 The Win Rogers Mg. Co. Hartford, Ct. 11 Springs. Cary & Co. 11 Springs. Cary & Co. 12 Cary & Co. 12 Cary & Co. 14 Control of Co. 14 Control of Co. 15 Cary & Co. 15 Cameron A. S. East 23(, N. Y. Clayton Steam Pump Works, 14 and 15 Cary & Co. 15 Canceron A. S. Co. 15	Zinc. Hart Lucius & C
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93	Steel Importers. Carr J. & Riley, 30 Gold, N. Y
92	Steel importers. Carr J. & Riley, 30 Gold, N. Y
. 35	Jones B. M. & Co., 11 and 13 Oliver, Boston, Mass36
40	Jones B. M. & Co., 11 and 13 Oliver, Boston, Mess. 36 Steel M. anulacturers. Albany & Rensselaer Iron & Steel Co., Troy, N. 7. 16 Atha, Benjamin & Co., 211 Pearl, N. Y. 95 Cloveland Rolling Mill Co., Cleveland. O. 95 Gautier Steel Co., Ld., Johnstown, Pa. 42, 16 Midvale Steel Works, Nicetown, Philia., Pa. 62, 25 Miller, Metcalf & Parkin, Pittsburgh. 62, 25 Miller, Metcalf & Parkin, Pittsburgh. 63, 26 Naylor & Co., 93 John, N. Y. 95 Pennsyvania Steel Co., 268, 4th, Phila. 6 Fhiladelphia Steel Forge, Philadelphia, Pa. 6 Rowland W. D. & Harvey, Frankford, Phila. 44 Smitt, Sutton & Co., Pittsburgh, Pa. 9 Singer, Simick & Co. Pittsburgh, Pa. 9 Singer, Simick & Co. Pittsburgh, Pa. 9 Stenland Steel Works, Philadelphia, Pa. 9 Stenland Steel Works, Philadelphia, Pa. 9 Stenland Steel Works, Philadelphia, Pa. 7 The Edgar Thomsoh Steel Co., of Broadway, N. Y. 36 The Steel Co., of Scotland, 72 Pine, N. Y. 35 Wardlow S. & C., Sheffield, England. 37 Steel Spirjas Springas, Manghotwers of.
28	Cleveland Rolling Mill Co., Cleveland, O.,
42 43	Miller, Metcalf & Parkin, Pittsburgh. 6 Naylor & Co., 99 John, N. Y
30	Pennsylvania Steel Co., 208 S. 4th, Phila
. 40	Sanderson Geo. & Co., w Gold, N. Y
	Singer, Simick & Co., Pitteburgh, Pa
d. 33	The Edgar Thomson Steel Co., 57 Broadway, N. Y 36 The Steel Co. of Scotland, 72 Pine, N. Y
40	Steel Spiral Springs, Manufacturers of. Cary & Moen, 234 W. 20th, N. Y
.12	Chatilion John & Sons, or and of Cliff, N. Y
4	The Chaimers-Spence Co., foot 9th St., E. R., N. Y. 48 Stocks and Dies.
36	The Chaimer-spence Ct., foot gin st., E. R., N. Y. 48 Stocks and Dies. Holroyd & Co., Waterford, N. Y
. 25	Hove Boards, Manufacturers of. Ansonia Brass and Copper Co., 19 and 21 Cliff. N. 1. 4
18	Ansonia Brass and Copper Co., 19 and 21 Cliff, N. Y. 6 Stove Trucks, Tucker Alarm Till Mfg. Co., Indianapolis, Ind
- 44	Copeland, Hall & Co., Rochester, N. Y
41	Stump Puller.  Dorsey R. S., Indianapolis, Ind.
40	Tucks, American Tack Co., Fairhaven, Mass,
44	American lace Co., Fairnaven, Mass. 8 Field A. & Sons, Taunton, Mass. 13 Grundy Geo. C. 16t Greenwich N V 99 Phillips E. & Sons, South Hanover, Mass. 9 Shelton & Co., Riveningham 6
6	Taps and Dies. Carpenter J. M., Pawtucket. R. I
3	Phillips E. & Sons, South Hanover, Mass. 9 Shelton & Co. Birmingham, Ct. 27 Taps and Dies. Carpenter J. M., Pawtuckef. R. 1. 44 Manning H. S. & Co., 111 Liberty, N. Y. 43 Wiley & Russei Mk. Co., Greenfielo, Mass. 46 Teating Machines. Olsen Thius & Co., Philadelphis, Pa. 25
13	
n. 7	Tower L. C., Rochester, N. Y.
0825	Tin Plate. Manufacturers or. U. S. Iron and Tin Plate Co., Pittaburgh, Pa 4 Tin Ware, Sammed and Japannes
28	U.S. Iron and Tri Plate Co., Pittsburgh, Pa. Tji Ware, Stammed and Japanned Block David, 69 Bayard, N. Y. Shepard Sidney & Co., Buffalo, N. Y. Y. Vogel William, Brooklyn, E. D., N. Y. J. Tire, U. Institers.
19	Tire Upsetters. Little Giant Mig. Co., Millport, N. Y
6829	
10-27	Tools. Steam and Gas Fitters. Armstrong F., Bridgeport, Ct. Saunders Sons, Yonkers, N. Y. Tran-portation Lines.
38	The Iron Line as Coenties Silv. W. W.
9 25	Tree Pruners. Lee E. S. & Co., Rochester, N. Y
17	Bruce Geo. W. 1 Platt. New York
la.39	Tube Expanders. Dudgeon Richard. 24 Columbia, N. Y. 9 Tubes. Telescope. R. J. Deakin, Fhiladelphia, Ps. te
40	R. J. Deakin, Philadelphia, Pate
~ 19	Tubing.  Merchant & Co 107 Market, Phila
18	Upholsterers' Goods. Turner & Seymour Mfg. Co. &r Reads. N. Y
43	morse twist trill & Mach. Co., N. Bedford, Mass
10	Barry Brothers Detroit Mich
4T	Hall Mfg. Co. 23 Dey, N. Y.
01	Miliers Falis Co., 74 Chambers, N. Y
17	Vises.  Hall Mfg. Co. 23 Dey, N. Y.  Howard Iron Works, Burnalo, N. Y.  Hitters Fals Co. 24 Chambers, N. Y.  Hitters Fals Co. 24 Chambers, N. Y.  Hitters Falson Vise Co. 44 Dey, N. Y.  Karchard, S. J.  Handson, E. 21 Broadway, N. Y.  Weather Strips.  Valentine W. T. Albany, N. Y.  Wheels, Hallroad,  Whitney A. & Sons, Philadelphia.
33	Wheels, Railrond, Whiteva & Sone Philadelphia
8	Whetstones. Pike A. F Pike Station, N. H
27	White Lend. Brooklyn White Lend Co its Front, N. Y  Brooklyn White Lend Co its Front, N. Y  Solicate Robert & Co 26, Pearl, N. Y  Jewell John E. & Bront, N. Y  Solicate Robert & Co 26, Pearl, N. Y  Solicate Robert & Robert & Solicate Robert &
38	Jewett John & Sons, 182 Front, N. Y
13	Hugunin R. B. Hartford, Ct
8.,	Hammond W. S., Lewisberry, Pa Wire, Manufacturers of.
37	Cleveland Rolling Mill Co., Cleveland, Ohio 36 Gautier Steel Co., Ld., Johnstown, Pa.
19	Gilbert & Bennett Mfg. Co., 273 Pearl, N. Y, Griswold J. Wool, Troy, N. Y, Harrison Wire Co. St. Louis, Mo.
	Howard & Morse, 45 Fulton. N. Y. Prentiss & Co. W. & Co. Holyoke, Mass
17	Trenton Iron co., Trenton, N. J. Washburn & Moen Mfg. Co., Worcester, Mass.
odur.	Wire Goods, Manufacturers or, Dufur & Co., 26 N. Howard st., Baltimore, Md
11	Hammad W. S., Lewisberry, Pa.  Cary & Moen, S., W. soch, N. Y.  Cleveland Kolling Mill Co., Cleveland, Ohio. 16  Gautier Steel Co., Ld., Johnshown, Pa
98:16 44	Gilbort & Bennett Mfg. Co. 27a Pearl, N. Y. Wire Nails. American Wire Nail Co. Covington. Ey. 37 Field A. & Sons. Taunton, Mass. HP. Nail Co., Cleveland, Ohio. 32 Wire Rope, Iron and Steet, Makers of. Broderick & Bascom, &t. Louis, Mo. 3 Hazard Mfg. Co., Wilkesbarre, Pa. New York Wire and Wire Rope Co., 23 Astor House, N. Y. Ropoling's John A. Sons. Trenton, N. J. 39 Ropoling's John A. Sons. Trenton, N. J.
	Wire Rope, Iron and Steet, Hakers of. Broderick & Bascom, dt. Louis, Mo.
9	Hazard Mfg. Co., Wilkesbarre, Pa New York Wire and Wire Rope Co., 25 Astor House, N. Y. Roeoling's John A. Sons, Trenton, N. J.
t.,	Rosoling's John A. Sons, Trenton, N. J
· 43	Wrenches, Manufacturers of Springfield, Mass. 184 33 Coes A. O. & Co., Worcester, Mass. 19 Girard Wrench Mig. Co., Girard, Ps. 19 Wringers 19
41	Girard Wrench Mfg. Co., Girard, Pa
R 44	Wringers. Alexander T. J. Boston, Mass. Alexander T. J. Boston, Mass. Metropolita Mrg. Co., 32 Cortlandt, N. T. 41 Peerless Wringer Co., Cincinnati, O. 19
44	Zinc. Hart Lucius & Co., 8 Burling Slip, N. Y

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METALS.

SCOTCH.

# NEW YORK WHOLESALE PRICES, November 3, 1880.

Egiliton	l.co Bessemer or pneumatic process, of whatever form description, shall be classed as
Palls	and the Cam Dieter
Iron.	
Wrought Scrap # ton	Best Cast P b 154
far Iron, from Store	Bound Machinery, Cast
残 to 2 in. round and square	Best Double Shear. F 1579 Blister, ist quality. P 130 German Steet, Best. F 110
Mediand   From   Mediand	.60 ad quality
Rods—% and 11-10 round and square	ac adquality
Norway Nail Rogs	ANTIMONY See Trade Repor
Common R. G.	LEAD.—DUTY Pig \$2 \$ 100 Ds; old Lead, 1560 D \$ Pipe and Sheet, 256 \$ B. American
Nos. 10 to 20 # b 3% 5	Pipe
Nos. 20 to 20. # 5 5% 5 1 to 24. # 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	# Prpe and sneet, 24c @ m
B.B. ad que	BABBITT METAL
	80 N. P. U
Patent Planished # m 120; B, 100	TIN.—DUTT: Plates, Sheets, Tagger and Terne, 1.10 \$\frac{1}{6}\$ is lecro-galvanized Plates, 20 \$\frac{1}{6}\$ is monthly and the property of sheet enumerated, 55 per cent. ad. val. Barrs, Block and Plgs free. Banca, subject to duty of 10 per cent. Ranca
American Cold Rolled	and Pigs free. Banca, subject to duty of 10 per cent Ranca3 18 hd 25 68 260
COPPER Durt Pig. Bar and Ingo t, se: OldCo per 4c a: W Manufactured (including all article which Copper is a component of chiefvaiue), 45 %	English
American Ingot 8 3 See Trade Repor	t. I C lox14 Prime Charcoal
Braziers' Copper, ordinary sizes, toos, per sq. ft., and over per lb. Braziers' Copper, ordinary sizes, toos, per sq. ft., and over per lb. Braziers' Copper, ordinary sizes, under 15 oz. and over 12 oz., \$\psi\$ sq. ft. Braziers Copper 10 oz and 12 oz., \$\psi\$ sq. ft. \$\psi\$ by a size of the si	I C 12X12 "
Braziera' Copper, ordinary sizes, under 16 oz.	I X 10X14   Charceal
Braziers Copper 10 08 and 12 08. W sq. ft W m 34 Lighter than 10 02. W sq. ft W m 34	C DC 1254X17 6.00 D X 1254X17 8.00 D X 1254X17 8.00 For each additional X add 2.00
Incles 84 in. diameter and over	For each additional X add
Rheathing Copper, over 12 oz. W sq. ft W h 26	0 I C 10x14)
Bopper hottoms	TERRE PLATE Prime Char. ad quas. Core.
	I C 14×20 \$ 5.75 5.50 5.25 I X 14×20 7.75
14X48	C 14x20   Frime Char, ad qual. Come.   C 14x20   S 5/5   S 5/5   S 14x30   7.75   S 12 0   S 14x30   S 12.00   S 14x00   S 12.00   S 1
O'NEILL'S PATENT PLANISHED COPPER.—Not. LAM.	IC 14740 M. F. Brana
4 and 10 os. and heavier. F 3 36s By the case. F 3 36 is os. and lighter B 350 " F 3 36	SPELTER-DUTY: in Pigs, Pars and Plates, \$1.50 P.
Poller Sine. 7 in., 1425. Sin., 1426. 14 and 16 os. and heavier. \$\psi\$ gio by the case. \$\psi\$ 37  (And all sizes not over so in. wide.)	American, cash Bergen Port from Lehiga Ore
(And all sizes not over se in. wide.)  90000  4 and 16 oz. and heavier	ZINC,-DUTY: Pig or Block, Leo Pace ba. Sheet
4 and 16 oz. and heavier	84c W M. 81ees. Cask
Brown & Sharp's Gauge the Standard for Metal; Ok	
Brown & Sharp's Gauge the Standard for Metal; Ole English Gauge the Standard for Wire, BRASS MANUFACTURERS' PRICE LIST. —dis 20%. June 10, 1880.	Paper Stock, &c.
Cash prices for Roll and Sheet Brass. For less quantity than 100 %s. add 30 \P \( \$\text{\$\exititt{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\	
All Nos. not thinner than to No. 38, Wider than 2 in.	(Dealer's Selling Price.) (Canvas linen
not wider than 1, in.  All Nos. to No. 25, inclusive, and widths over 14 to 2 in, inclusive	White cotton, new
All Nos. to No. 28, inclusive, and widths over 20 to 30 in., inclusive	White linen rags No. 1
clusive.	
All Brass thinner than No, 28 is Flaters' Brass, at.,	Kentucky bagging.
Sheets wider than 30 in. and under 40 in	Rope cittings
Circular Sheets, in chara. From 4 in. to 14, inclusiveoc	Tarred shaking
10 10 40 110 140 140 140 140 140 140 140	No. 1
LOW BRADE.	
4c \$\mathbb{B}\$ more than High Brass, Gilding Metal, \$c \$\mathbb{B}\$ more than High Brass.	Imperfections, No. 2, best folded sheets
	Gunny baggins
Gilding Metal, Sc # 5" more than High Brass.  (In Bars	Lagran 194 ( 194 )
Gilding Metal, &c # 5 more than High Brass	Lagran 194 ( 194 )
Gilding Metal, so # 5" more than High Brass.  Asc Platers' or Gold Metal & In Bars	Lagran 194 ( 194 )
Gilding Metal, Sc # 5 more than High Brass.  (In Bars	Lagran 194 ( 194 )
Gilding Metal, & # 5 more than High Brass.  (In Bars	Mixed   part white   3½
Gilding Metal, &c # 5 more than High Brass.  (In Bars	Lognt
Gilding Metal, & # 5 more than High Brass.  (In Bars	Lagran 194 ( 194 )
Gilding Metal, & # 5 more than High Brass.  (In Bars	Lognt
Gilding Metal, Sc. # 5: more than High Brass.  (In Bars	Newspapers
Gilding Metal, Sc. # 5: more than High Brass.  (In Bars	Newspapers
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Gilding Metal, & # 5 more than High Brass.  Platers' or Gold Metal (In Bars	Paints, Oils, &c.  Paints, Oils,
Gilding Metal, & # 5 more than High Brass.  Platers' or Gold Metal  Planed or Polished.  Plan	Newspapers
Gilding Metal, & # 5 more than High Brass. 48  Platers' or Gold Metal (In Bars. 48)  Platers' or Gold Metal (Planed or Polished 45)  From SITTINO.  Metal in width 2 in to 1 in., thinner than No. 28, 2c. # 20  Metal, in width 2 in to 1 in., thinner than No. 28, 2c. # 20  Metal, in width 2 in to 1 in., thinner than No. 28, 2c. # 20  Metal, in width 1 in. to 1/2 inliner than No. 28, 2c. # 20  Metal, in width 1/2 in. to 1/2 inliner than No. 28, 2c. # 20  Metal, in width 1/2 in. to 1/2 inliner than No. 28, 2c. # 20  Metal, in width 1/2 in. to 1/2 inliner than No. 28, 2c. # 20  Metal, 1/2 in. in width and less, 10c. # 20  Metal, 1/2 in. in width and less, 10c. # 20  Metal, 1/2 in. in width and less, 10c. # 20  Metal, 1/2 in. in width and less, 10c. # 20  Metal, 1/2 in. in width and less, 10c. # 20  Metal, 1/2 in. in. width and less, 10c. # 20  Metal, 1/2 in. in. width and less, 10c. # 20  Metal, 1/2 in. in. width and less, 10c. # 20  Metal, 1/2 in. in. width and less, 10c. # 20  Metal, 1/2 in. in. width and less, 10c. # 20  Metal, 1/2 in. in. width and less, 10c. # 20  Metal, 1/2 in. in. width and width and 1/2 in. in. in. in. width and width 1/2 in.	Paints, Oils, &c.  Paints, Oils,
Gilding Metal, & # 5 more than High Brass.  Platers' or Gold Metal  (Planed or Polished.  (Planed or Padvance.	Paints, Oils, &c.  Buc Chinese dry, 10, 66, 66, 66, 66, 66, 66, 66, 66, 66, 6
Gilding Metal, & # 5 more than High Brass.  Platers' or Gold Metal  (Planed or Polished.  (Planed or Padvance.	Paints, Oils, &c.  Buc Chinese dry, 10, 66, 66, 66, 66, 66, 66, 66, 66, 66, 6
Gilding Metal, & # 5 more than High Brass.  Platers' or Gold Metal  (Planed or Polished.  (Planed or Padvance.	Paints, Oils, &c.  Buc Chinese dry, 10, 66, 66, 66, 66, 66, 66, 66, 66, 66, 6
Gilding Metal, Sc. # 5 more than High Brass. 48  Platers' or Gold Metal (1 Bars. 48)  Platers' or Gold Metal (1 Bars. 48)  Naved 1 in width 2 in. to 1/2 in. to No. 28, inclusive, ic. # 5 advance.  Metal in width 2 in. to 1/2 in. to No. 28, inclusive, ic. # 6 advance.  Metal, inwidth 1 in. to 1/2 inluner than No. 28, 20, # 8 advance.  Metal, inwidth 1/2 in. to 1/2 inlusive, not thinner than No. 28, 20, # 5 advance.  Metal, in width 1/2 in. to 1/2 thinner than No. 28, 50, # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Meral in width 2/2 in. 1/2 in.	Newspapers
Gilding Metal, & # 5 more than High Brass.  Platers' or Gold Metal    Planed or Polished   5	Paints, Oils, &c.  Buc Chinese dry, 10, 66, 66, 66, 66, 66, 66, 66, 66, 66, 6
Gilding Metal, Sc. # 5 more than High Brass. 48  Platers' or Gold Metal (1 Bars. 48)  Platers' or Gold Metal (1 Bars. 48)  Naved 1 in width 2 in. to 1/2 in. to No. 28, inclusive, ic. # 5 advance.  Metal in width 2 in. to 1/2 in. to No. 28, inclusive, ic. # 6 advance.  Metal, inwidth 1 in. to 1/2 inluner than No. 28, 20, # 8 advance.  Metal, inwidth 1/2 in. to 1/2 inlusive, not thinner than No. 28, 20, # 5 advance.  Metal, in width 1/2 in. to 1/2 thinner than No. 28, 50, # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Meral in width 2/2 in. 1/2 in.	Newspapers
Gilding Metal, Sc. # 5 more than High Brass. 48  Platers' or Gold Metal (1 Bars. 48)  Platers' or Gold Metal (1 Bars. 48)  Naved 1 in width 2 in. to 1/2 in. to No. 28, inclusive, ic. # 5 advance.  Metal in width 2 in. to 1/2 in. to No. 28, inclusive, ic. # 6 advance.  Metal, inwidth 1 in. to 1/2 inluner than No. 28, 20, # 8 advance.  Metal, inwidth 1/2 in. to 1/2 inlusive, not thinner than No. 28, 20, # 5 advance.  Metal, in width 1/2 in. to 1/2 thinner than No. 28, 50, # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Metal, 1/2 in. in width and less, icc. # 5 advance.  Meral in width 2/2 in. 1/2 in.	Newspapers

	fries.			
Asphaltum				
Benzine			seen W	gal I
Block. Dryer, Patent, Am'n Frostings.	888	t cans.	1056C:	keg.
Frostings	*******	******	******	9
Glue, White	******	*******	*** ***	3 4
" Sheet	*******	******	*****	2
Gum Conal				20
" Damar				2
" Shellac, English dark				
Viahanna Problem dark		******		4
Litharge, English Mineral Wool			D th rid	0 1
Putty, in bladders				34
Putty, in bladders				3
" in bulk Spirits Turpentine				01 47
Whiting Spanish				94
Gia				
PRENCH WINI	OW OF	ARS.		
Prices current p	er boar e	U 30 /00	16.	
Single ThickD	iscoun	45 to 5	o %.	
SIZES,	zat.	ad.	3d.	4th.
6 x 8 to 10 x 15	# 6,40	8 4.75	8 5.50	\$ 5.2
TE W 14 EQ 16 W 24	7,25	0.75	0.26	6.0
18 x 22 to 20 x 30	9.25	8.50	7.75	2.3
18 X 22 to 20 X 33 15 X 35 to 24 X 30 26 X 28 to 24 X 36 26 X 36 to 24 X 44 26 X 36 to 26 X 44 30 X 52 to 30 X 54	10.25	9.25	0.25	
26 X 36 LO 26 X 44	11.76	10.00	9.50	
26 x 46 to 30 x 50	13.25	12.50	10,50	
30 X 52 to 30 X 54	14.00	13.00	11.25	
		13.75	12.50	
34 x 58 to 34 x 60	17.50	15.00	15.00	
Double ThickDi	-4.3-		-	
Double 14108D				
	18%	ad.	30.	4th.
SIZES.			# 7.50	\$ 7.00 8.25
6 x 8 to 10 x 15	\$ 8.25	8 7-75	8.25	
6 x 8 to 10 x 15	10.00	9.25	\$ 7.50 8.75	8.35
6 x 8 to 10 x 15 11 x 14 to 16 x 25	10.00	11.75	10.75	8.25
6 x 8 to 10 x 15 11 x 14 to 16 x 25	10.00	11.75	10.75	8.25
6 x 8 to 10 x 15 11 x 14 to 16 x 25	10.00	11.75 19.00 13.75	10.75 11.75 12.50 13.00	8.25
6 x 8 to 10 x 15,	10.00 12.75 14.25 15.25 16.25	11.75 19.00 13.75	10.75 11.75 12.50 13.00 14.25	8.25
6 x 8 to 10 x 15,	10.00 12.75 14.25 15.25 16.25 17.50	11.75 19.00 13.75	10.75 11.75 12.50 13.00 14.25	8.25
6 x 8 to 10 x 15 11 x 14 to 16 x 25	10.00 12.75 14.25 15.25 16.25	11.75	10.75 11.75 12.50 13.00	8.25

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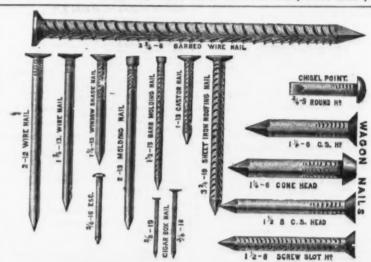
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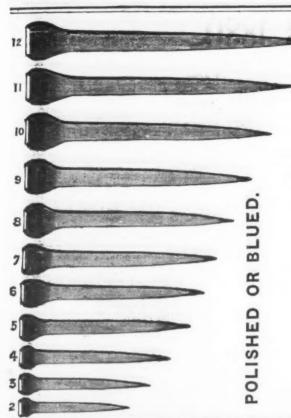
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Humphrevaville Mfg. Co dis 40	8
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Kasson's Patent	10 %
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Patent Solid Head. dis Lewis' Patent Singie Twist. dis 33 Russell Jennings' Auger Dowel, Machine- "lowel and Hand-Rafi Bits. dis 16%-Kroknok Russell Jennings' Augers. dis 16%-Kroknok Russell Jennings' Car and Machine Bits, Boring- "Sachine and Millwrignts' Augers dis 24%-102-106 Imitation Jennings' Bits. dis 40% Ives "Jenaings" Bits. dis 30%-Kroknok Andrews Bits. dis 25 yensive Bits, Clark's, small, \$75; I'ge, \$56. dis Expressive Bits, Clark's, small, \$75; I'ge, \$56. dis	to %
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And own Bits	15 % 15 %
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"Univ'sal Expansive, each \$4, to—dis Woods. dis 2 disabet Bits \$3,00  gross, dis 2 disabet Bits \$5,00 \text{ gross, dis 2 disabet Bits \$6 disabet Bits \$6 disabet Bits \$700 \text{ gross, dis 2 disabet Bits \$700 \text{ gross, disabet \$70	5%
Diamond	5 %
Double Cut Gimlet Fits Shepardson's. dis 3cd.  "Ge Valley Mig. Co., dis 9cd.  "G. Valley Mig. Co., dis 9cd.  "Hartwell's. dis 6cd.  "Douglass" dis 6	0%
Morse' rBit Stock Drill	1 × 2 × 2
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Patent Sewing, Short	N N
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Handled Scratch \$7.00 \( \text{gross-dis 20&10} \) Socket Scratch \( \text{\$1.00@\$1.25} \) dos-n Brad Pets, Alken's \( \text{\$7.00} \) dos \$12.00—dis 44&10	et T
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Taylor's Bronze or Plated Lever	Ga
Western dis 20210  Quil dis 402002220  Cow, Common Wrought dis 40200220	W
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× ×	Door Springs. Torrey's Rod	2 or 4
MMM	Bee Rod \$ dos \$1.70	not.
**	Gem (COl)-   No. 1, Large, Japanned   \$\pi\$ dos \$3.50   18     No. 2, Medium   \$\pi\$ dos \$3.50   18     No. 3, Medium   \$\pi\$ dos \$3.50   18     No. 4, Medium   \$\pi\$ dos \$3.50   18     No. 4, Medium   \$\pi\$ dos \$3.00   2.50   2.50     Coppered   \$\pi\$ dos \$4.00   2.50   5.50     Coppered   \$\pi\$ dos \$4.00   2.50   5.50     Galvanised   \$\pi\$ dos \$4.00   2.50   5.50     Nickeled   \$\pi\$ dos \$4.50   5.00   5.50     Nickeled   \$\pi\$ dos \$4.50   5.00   5.50     Nickeled   \$\pi\$ dos \$4.50   5.50   5.50   5.50     Nickeled   \$\pi\$ dos \$4.50   5.50   5.50   5.50     No. 4, ("Snoo Fly") Sercen door size \$\pi\$ dos \$3.50   18     No. 4, ("Snoo Fly") Sercen door size \$\pi\$ dos \$3.50   18     No. 5, Screen Door Size   \$\pi\$ dos \$2.50   18     No. 6, Medium   \$\pi\$ dos \$2.50   18     No. 7, Large   \$\pi\$ dos \$2.50   18     Sabin's Lever   No. 1, \$1.2, \$1.50; \$3.83; \$4.83; \$5.50; \$1     Sabin's Crow n   \$\pi\$ dos \$2.75; \$1     Barker's Coucealed   \$5.10, \$5.50; \$1     Rubber   \$0.00   \$1.50;	t not
5 5	No. 3, Small. No. 5, Small. Challenge (Coll)  Japaned  Mos. 9  Os. 9  Os	MOU
* * *	Coppered	10 %
**	Star(Coll)—For Cop'd, Nickel-Plated, &c. see list. No. 4, ("Snoo Fly") Screen door size # doz \$1.80   NO. 8, Screen Door Size	
x	No. 6, Medium	20 %
MMM	Sabin's Boss No. I, \$5.40; 2, \$4.20; 3, \$3.00.dis Sabin's Crown, 6 Gos \$2.75; dis Philadelphia 5 in. \$5.00; is in. \$7.00 dis	50 % 50 %
**	Barker's Coucealeddis Cowell'sNo. 1, \$18.00; No. 2, \$15.00 F doz. dis Rubber complete No. 0, \$1.500 F doz. dis	20 % 50 %
**	Drawing Maives.	
***	Crossman's No. 1	20 E
K	Nobles Mfg. Co dis Bradley* dis Adjusteble Handle dis Witherty Tool Co dis ox Ourlass dis	35 %
K K	Witherby Tool Co	201
*	Slacksmitus'	20 S
5	Breast P.S & Wdis 20&	ac %
4		
	Ratchet, Merrill's	10 %
	* Weston a	25 %
	"Miller's Fails each \$2.00 dis at Bartholomew's each \$2.00 dis at Bartholomew's each \$2.00 dis at Batches, inversol's dis at Whitney's dis "Weston's dis "Weston's dis "Weston's dis a Weston's dis a Whitney's Hand Drill dis Wilson's Drill Stocks dis Automatic Boring Tools each \$2.25, dis Automatic Boring Tools each \$2.25, dis	io %
	Drill Chucks,—Morse's Beach Pasent dis " Adjusteach Sro.cc. dis Danbury	20%
	Eng Henters. W dos. \$2.50	net
	Familyper gross \$15; per dos., \$1.50;	net
	Elevator Buckets, 18th, 314 to 10 in. (Duc's Improve	ed)
	Hill E. Buckets, heavy, 5 to 10 inches (Duc's Improv	ed)
1	Storehouse, (Duc's Patent) 12 to 17, \$12.00 @ \$20.00,I Emery and Emery Paper.	let
ı	Genuine Chester—Regular Nos # b	
ı	Genuine Chester—Regular Nos.   P	RE SC
ı	Excelsior Milis, Regular Nos., Grain in kegs # %	6C
١	Weilington Mills, Grain Phour Biour Phour Phour Phour Son Hampden Emery Grain. 50 n Son Son Son Manimeled and Tinned Ware.	90 et
	Hampden Emery Grain	et s %
1	Sauce Pans dis 30	8
ŀ	Escutcheon Pins. dis m	8
1	Brass	CB E
1.2	grass Threaddis 44	S   Y
(S) MI	Fenn's	% B
A delta	rrary's Patent Petroleum. dis 20210 Wood and Matallie. dis 40 Wost's Pate Esy dis 45	MAN B
ACM	Wood dis at Fenn's dis ac Fenn's dis ac dis	**
	Fellos Plates # 5 roc, dis re Fites.	K B
AAR	Files.  uburn.	% P 86
NN	M. Boynton's	H
HJ	lacox File Mfg. Co., new list	K R
MAR	onnson & Bro. dis 30 utcher's. 450 to: Valter Spencer & Co.'s "Diamond", 450 to:	BOO
MH	laners	B B
SID	dis 30   d	Be
K	#Inting Machines. nox, 4-inch Rolls	CI
P	erless, 4-inch Rolls 4.00 each net	t Co
E	" 5 " 4,74 each uei agia, 314-inch Roll. \$3.15, dis 10 1 " 516 " " 82.85, dis 10 5	Pi
E	"No. 1, 7-inon Roll	Ta
CISE	rown. 4% in. \$4.00: 6 in. \$6.00 each dis 10 ft. \$6.00 each dis 10 ft. \$7.00 each dis 10 ft. \$8.00 each dis 10	Gr W
AI	merican, 4 in., \$3;6 in., \$3.40;7 in., \$4.50 each, dis 10 in one stic Fluter.	Ho
Cr	rown Hand Futer, Nos. 1, \$15.00; 2, \$12.50; 3, \$12.00; 4 dos.	Au
CI.	** ** ** ** No. 90, \$0.00; No. 110, \$7.21;	A
Ço Bu	mbined Futer and Sad Iron	No H.
- 1	Forus.	l N
Pai	ny, Manure and SpvMingdis 402; 5 ated A. I. Rogers & \$70dis 335&5; 5 "Reed & Bartondis 335&5; 5 Fruit and Jelly Presses.	R
En	terprise Mrg. Codis 30 %	
	Fry Pane.	100
,	rnished, itst as foliows	221
Ĝ	CMe"	Iro
WI	redis to \$	Kit Cor
6	dis 45 % gross \$2.00 dis 60% to 4	K
ED	ureka Gimlets	Ens
	Smith's Patent. # dos \$18.ee, dis 40 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1	Am
Gin	ilue Peta.  ned and Enameled	Hay
6	" L. F. & C.'s "Handy	Car
e	ading Hardware Co., new list dis 25 to \$	Bas Her Doo
	M. C. B. E. 11 up	Pur
	41 P. E. 17 UD 9.30 (	APR 25

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Ammers.  Cheney's dis S. Hammonds (new last July 20. 20). dis Humason & Beekley dis to Verree. dis Magnetic Tack, Nos. 1, 2, 3, \$1.25, 1.90 and 1.74 dis 20& Warner & Noble's. dis Kin's (old list). dis	25 20 50 15 10
Hand Cuffs and Leg Irons.  Providence Tool Co.'s Hand Cuffs, \$15.00 \$\tilde{T}\$ dos \\ Leg Irons, \$27 \$\tilde{T}\$ dos \\\.	105
Tower's	10
Roggin's Latches Per dos %c@@ce to the Pronzed Iron Dren Latches Per dos %co@ 1.1x dis 1 Jap'd Store Door Handles—Nuts. \$2.cc; Plate \$2.35 no Plate, \$1.08 dis 1 Barn Door per dos \$1.8c, dis 1 Wrought Chest dis 6cet. \$2 Surface Chest. Sargent's list dis 6cet. \$1 Surface Chest. Sargent's list dis 6cet. \$1 Flush Chest dis 6cet.	10 10 10 10 10 10 10 10 10 10 10 10 10 1
Saw and Piane dis 40&1 Boynton's Pat. Loop Saw Handles dis 2	0 %
Hammer and Hatches dis z  grad Aw! Hickory Firmer Chisel, assorted, \$\pi\$ gross \$\pi_{\color{1}}\color{1}\color	8 0 %
Douglass' # set \$1.25, n	et
Hangers. dis coking Barn Door, old patterns dis coking Royalty dis coking Challenge dis Challenge dis Challenge dis Secring Improved (Anti-Friction) dis Secring Improved (Anti-Friction) dis Cheritree dis Secring dis Cheritree dis Secring dis Secring Improved (Anti-Friction)	****
Harness Shaps. Henshaw's List of 1% changed to 14 co. dis tokto	8
Judd's" " 14.00. dis 50&10 Fitch's (Bristol) " 14.00. dis 50&10 Great Western dis 50&10 Southkiss' dis 10 Andrews' dis 50 Sargent's dis 60&10 Govert dis 60&10 Covered Spring dis 50 dis 40 dis 50&10	*
Hatcheta- isainh Blood	*
Claw, Nos. 1 2 3	
Yerkos & Plumb	
Claw, Nos. 123 \$\times\$ dos \$0.00 0.50 10.00 Lathing, Nos. 123 \$\times\$ dos \$0.00 0.50 10.00 12.00 14.00 Nos. 1234 \$\times\$ dos \$0.00 10.00 12.00 14.00 Nos. 5678 \$\times\$ dos 16.00 18.00 20.00 22.00	
### ### ##############################	
#Hinges.  Gate, Western	
** N. E. Reversible	
Rolled Blind Hinges. dis 6:2:10 g Rolled Plate. dis 6:2:10 g Rolled Plate. dis 6:2:10 g Rolled Raised. dis 6:2:10 g Wrought Strap and T. list Dec. 20, 77 dis 4:4:10 g Plate Hinges 1:8, 10 d Is 10, 8:4:0 % 100 B "Providence" over 12 in. \$5.20 % 100 B   dis 10 g	
Heavy Welded Hook   \$40 55 in., \$40 0 100 in   \$\ \text{dis to \$5} \]  Heavy Welded Hook   \$50 12 in., \$2.75 0 100 in   \$\ \text{dis to \$5} \]  Heavy Welded Hook   \$6 to 12 in., \$2.75 0 100 in   \$\ \text{dis to \$5} \]  Heavy Welded Hook   \$6 to 12 in., \$2.75 0 100 in   \$\ \text{dis to \$5} \]  Heavy Welded Hook   \$6 to 12 in., \$2.75 0 100 in   \$\ \text{dis to \$5} \]  Heavy Welded Hook   \$6 to 12 in., \$2.75 0 100 in   \$\ \text{dis to \$5} \]  Heavy Welded Hook   \$6 to 12 in., \$2.75 0 100 in   \$\ \text{dis to \$5} \]  Heavy Welded Hook   \$6 to 12 in., \$2.75 0 100 in   \$\ \text{dis to \$5} \]  Heavy Welded Hook   \$6 to 12 in., \$2.75 0 100 in   \$\ \text{dis to \$5} \]  Heavy Welded Hook   \$6 to 12 in., \$2.75 0 100 in   \$\ \text{dis to \$5} \]	-
\$\frac{\partial \text{in.}}{\partial \text{in.}} \  \frac{\partial \text{in.}}{\partial \text{in.}} \  \text{in.} \  \frac{\partial \text{in.}}{\partial \text{in.}} \  \text{in.} \  \text{in.}  \text{in.} \  \text{in.}  \text{in.} \  \text{in.}  \text{in.}  \text{in.}  \text{in.} \  \text{in.}  \text{in.}  \text{in.} \  \tex	1
Grub dis 15 15  Planters' dis 3, 5 Scovill Pattern. dis 20 15 Scovill Pattern, Handled. dis 20 15 Scovill Pattern, Handled. dis 3, 5 Hick's Pat. Solid C. S. Pianters' dis 20 16 Scovill Pattern dis 20 15 Scovill Pattern dis 20 25 5	1
Bird Cage, Sargent's list	I
Cotton Ciston (is to \$ Cotton Patented (N. T. Maliet & Handle Wks), dis gc Cotton (Humason & Beckley Mfs. Co.)	B
Cotton (Humason & Becklev Mfs. Co.)	PN
Ont and Hat, Sargont's list.	AC B
Wroughtstables and Hooks and Staples, dis 6.42106.703  "Staples, Stanley's list. dis 6.4210.8  Wire Storew Hooks and kyes, new list. dis 6.4210.9  Prass and Bush dis 6.4210.8  Whiffetree—Patent dis 40.53  Sooks and Eyes—Malleable Iron. dis 60.210.3  Brass dis 60.210.3	MBTBOP
Herse Nails.  Nos. 5	4
OF BILECT. 376 290 300 340 340 390 1 C	HUGE
Horse Shoes.—Burden	P
ce Awis, Chisels, &	Ch
Pick in Handle # dos 3.00 net to Axes Small, Cast or Halleable. # dos 1.20 net titchen lee Tons # dos 2.21 net ombination ice Tools # dos 8200 net	Jo Da Ba Fla Va
ettles. Brass, 7 to 13 inches inclusive	Eu
Bhoe dis 15 Bread Bread dis 15 Bread oran's Shoe and Bread Enives. dis 20 S ay and Straw— Wadsworth's dis 20 S ay and Straw— Wadsworth's dis 23 S Bread Grand Straw— Wadsworth's Sea Challeng	Ho Bri

dis 33	creney's	* Reading
***************************************	net   mumason & Deckiey	50 %   W.mmtamma
	Warner & Noble's	1.05   Murricane No. 2.   No. 0, \$8.65; No. 1, \$10.15; no. 1.05   Murricane No. 2.   With Guards 25ce extra.   1.05   Murricane No. 2.   No. 5, \$\psi\$ doz \$87.75, no. 205   Peorless.   No. 5, \$\psi\$ doz \$11.775, dis 10-k10   1.05   Murricane No. 2.   Murrica
d1s		
dis	Hand Cuffs and Leg Irons.  Providence Tool Co.'s Hand Cuffs, \$15.00 \$\pi\$ dok \ Leg Irons, \$25 \$\pi\$ dox \\}	Yankeedis locale
W dos \$2.10, dis	O % Tower's dis	of a Common Definition of the Control of the Contro
\$\(\psi \) dos \$1.70.	net Nos	
dis 15th	Roggin's Latches ner dos scomace	net Eureka, Tinned# doz \$8.00, dis 10
# dos \$3.50   list:	net Bronzed Iron Drep Latches # dos \$0.90 @ 1.15 dis Jap'd Store Door Handles—Nuts. \$2.00; Plate \$1.35	Sammis'No. 1, \$7.00; No. 2, \$12.00 \( \) doz, dis 4.00 no
7 0	no Plate, \$1.08	
0 4.50 5.00 0 4.00 4.50 0 6.00 7.00	18t	Califers.—Lines 2 is
ted, &c. see list.	Flush Chest	10 \$ \$7.50
ee % dos \$1.80 ) % dos \$2.00 \ dis 2	Lifting Plane dis cok Saw and Plane dis took Boynton's Pat. Loop Saw Handles dis "Centennial Saw Handles dis	25 5 Locks and Latches.
SP dos a re	Hammer and Hatchetuis	Locks and Latches.   Changes made in list price of Cabinet—Eagle.   Changes made in list price of Cabinet—Eagle.   Changes made in list price of Cabinet—Eagle.   Changes made in list price of Cabinet   Ch
3, 82; 4, 82.50; dls 3 84.20; 3, 83.00.dls 5 608 82.75, dls 5	Hickory Firmer Chisel, assorted, # gross \$4.50	Bridgeport) and also July 15, dis 10&2&
	Apple " assorted, " 5.00 large, " 6.00	Langstroth & Crane's List Jan. 1 '77.
, \$15.00 \( \) doz, dis 2 \( \) doz \( \) doz, dis 5	Socket Framing assorted, 5.00 2081	10 % No. 14 to 12
dis 4	Auger, assorted, # gross	A. E. Deitz, Flat Key
dis 65&	Patent Auger, Ives'	"Shepardson" or "U. S."
dis 65&2	S Hangers.	net Plate
dis 3	% I Barn Door, old Datterns	Brancord
dis 65&x	% Novelty	Norwalk
88ch \$2.70 m	S Challenge dis 5 Climax (Anti-Friction) dis 5 Climax (Anti-Friction) dis 6 certification dis 6 certification) dis 6 certification dis 6 cer	10 S Russell & Erwin dis 500.2 8 eash (S 600.2 8 eash (S
each \$7.40, dia 2:	E LIGHER B	Trenton Look Co
dis 20&10		Padiocas Hussell & Erwin
each fe an die a	Judd's " " 14.00. dis 50&10	Win. Wilcox & Co and s s for cash Yale Lock Mfg. Co.'s "Standard"dis 40 %
each \$3.00. dis 20 ach, \$2.50 dis 45&10 dis 10	Great Westerndis şoğu	Conestogadis to %
	\$ Andrews'	A. E. Dietz
dis 20 @ 25	% "German dis took: % Covert dis 40	Lignumvite
	Covered Springdis 50&10	Penfield Block Works, Lig., Apple & Hickorydis 10 street Cutters   Miles' Challenge
each \$2.25, dis 20 Patent dis 30	isaiah Blooddis 1	Miles' ChallengeNos. 17.00 19.00 30.00—dis 32 %
teach Sre.oc, disgo	Lathing, Nos. 1 2 3 Wdos 7.50 8.00 A.	Perry's Nos. 1 2 3 4 4 g'rd 5 g'rd
	Bhingling, Nos. 1 2 3 # dos \$7.25 \$6.00 \$8.75	Woodruff's (P. 8. & W.)Ncs. 100 13.00 36.00—dis 30 %
W dos. \$2.50 no dos \$4.50, dis 33%	Claw, Nos. 1 2 3 # dos 7.75 8.50 9.25	Hales'
5 ; per dos., \$1.50 no	Lathing   Nos. 1 2 3.	Draw Cut Nos 5 2 5 8 10 Each\$50.00 75.00 80.00 225.00 420.00 dis 20 5
. (Duc's Improved	Lathing. Nos. 1 2 3	Nos 1 3 3 4 B
00 \$15.00 @ \$54.00, no es (Duc's Improved	Shinging, Nos. 1 2 3 # doz 87.52 \$8.00 \$8.50 Claw. Nos. 1 2 3 # dox 825 875 0.25	Each \$4.00 7.00 10.00 36.00 60.00 60.00 Kieser's No. 55
02 \$5.60 @ \$10.20 to	t Lathing Nos. \$40 dos 7.90 8.00 8.40 dis x	Bilver & Deming
1	Lathing Nos. 0 2 2 3 9 dos 2,00 8,00 8,00 8,00 8,00 8,00 8,00 8,00	Second   Color   Col
# W	Broad, Nos. 1 2 3 \$\frac{1}{2}\$ dos \$.00 8.50 9.00 10.00 12.00 14.00	Beef Shavers (Enterprise Mfg. Co )
ac extr	Collins	1 2 1 money law America, ber Broom, r others, 84. 3 Different Etc.
n in kegs 9 % 6	Claw Nos. 1 2 3 P dos 6.40 7.00 7.40	Lathrop's
nd FF " W B 4	Star Materia	Smith's per dos \$1.7c, dis 10% Cowles Hdw. Co dis 40% to 5
. cans	"Lightning" # dos \$30,00 ns Wadsworth'sdis 335	Stepoins Patterndis sodiu s
	Hinges.	Tinned Endsdis 40%10 % Chase's Hard Metaldis 50%10 %
dia 20@25!	" W. E	S Bush's
	* N. E. Reversible dos 86.50. dis 60	g Boss, No. 1 2 3 d dis re s
dis 30 5	"N. E. Reversible	Cowles Edw. Co.
dls 20 5	4 Common Sensedis 10	Naus
die 45 9	" Shepard's	Square Nute
unts as Door Locks	Rolled Platedis 6-&tc	Washers
222 alb	Plate Hinges (5, 10 & 13 In. \$6,50 \$\pi\$ 100 \$\pi\$ (dis 10 \$\pi\$)	Nat Crackers Table (Rumason & Beckley Mfg. Co.). dis 33% s Riake's Pattern. does 83.00. dis 10 s Turner & Seymour Mfg. Co. dis 25 dis 50 s
dis 40 % dis 40 % dis 55 % to 9 dis 20 % dis 20 % dis 20 % dis 40 % dis 20	Screw Hook and S & 10,12 In., \$6.75 \$ 100 B dis 10 S	Turner & Seymour Mfg. Codis to \$
dis 55/k10 %	Heavy Welded Hook   8 to 12 in., \$0.75 \( \) 100 \( \) dis 10 \( \)	Oakum. Bost. # 5 110 U.S. Navy # 5 100 Navy # 5 100
dis 40 %	Some Week and Pro St in., 90 dis	NAVV W B Sigo
dis 50 %	56 in. 100 at 8	Brass and Copper
doz, \$95.00, dis 20 %	Hees.—Riveted Shankper dos, \$5.00; dis 35 \$	Prior's Patent or "Paragon Zinc. dis to 8
	Grubdis 25 %	Olmstead's, Tin and Zinc
.85.00 to £. dis 20 %	Grub	Olmstead's, Tin and Zinc.
. Bc.00 to £, dis 35 % . Bc.00 to £, dis 20 % dis 30 % new list, dis 25 % 	Grub dis 18 2 Planters' dis 18 2 Secovill Pattern dis 2000 Secovill Pattern and Secovill Pattern dis 2000 Secovill Pattern	Oliters.—Zinc and Tin. dis 10 % 10 % 10 % 10 % 10 % 10 % 10 % 10
	Grub dis 18 9 Planters' dis 18 9 Secovill Pattern, Bandled dis 20 Secovill Pattern, dis 20 Secovill Pattern dis 20 Winsted & Lane, Planters dis 20 Secovill Pattern, dis 20	Olmstead's, Tin and Zine.   dia 50 %
.85.00 to 8. (113 3c % .85.00 to 8. (113 3c % .113 3c %	Hees Riveted Shank   per dos. \$1.00; dis 31.5	Olmstead's, Tin and Zine.   dia 50 %
.85.00 to E. dis 9 t 585.00 to E. dis 20 t	Grub	Pendis   April   Apr
	Bird Cage, Sargent's list	Pendis, Faber's Carpenters'
.84.00 to 8. dlls o 5	Bird Cage, Sargent's list	Pendis, Faber's Carpenters'
.8c.00 to £. dia yc's. 85.00 to £. dia yc's. 185.00 to £. dia yc's. 185.00 to £. dia yc's. 185.00 tia yc's.	Bird Cage, Sargent's list	Pencils, Faber's Carpenters' High list, dis 40&20 % Round Gilt \$\sqrt{g}\ \text{g}\ \text{gross} \ \partial{\partial{g}\ \text{gross}} \ \ dis 40 & 10 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
dis 30 %	Bird Cage, Sargent's list	Pencils, Faber's Carpenters' High list, dis 40&20 % Round Gilt \$\sqrt{g}\ \text{g}\ \text{gross} \ \partial{\partial{g}\ \text{gross}} \ \ dis 40 & 10 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
dis 30 %	Bird Cage, Sargent's list	Pencils, Faber's Carpenters' High list, dis 40&20 % Round Gilt \$\sqrt{g}\ \text{g}\ \text{gross} \ \partial{\partial{g}\ \text{gross}} \ \ dis 40 & 10 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
3.25 each dis 20 %	Bird Cage, Sargent's list	Pencils, Faber's Carpenters' High list, dis 40&20 % Round Gilt \$\sqrt{g}\ \text{g}\ \text{gross} \ \partial{\partial{g}\ \text{gross}} \ \ dis 40 & 10 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
3.25 each dis 10 % 6.50 dis 10 %	Bird Cage, Sargent's list	Pencils, Faber's Carpenters' High list, dis 40&20 % Round Gilt \$\sqrt{g}\ \text{g}\ \text{gross} \ \partial{\partial{g}\ \text{gross}} \ \ dis 40 & 10 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
3.25 each dis 30 \$ 3.25 each dis 10 \$ 6.50	Bird Cage, Sargent's list	Pencils, Faber's Carpenters' High list, dis 40&20 % Round Gilt \$\sqrt{g}\ \text{g}\ \text{gross} \ \partial{\partial{g}\ \text{gross}} \ \ dis 40 & 10 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
3.25 each let dis 10 % 4.00 ii dis 10 % 4.75 each net 4.75 each net 82.85 dis 10 % 4.00 each dis 10 % 4.00 each dis 10 % 4.00 each dis 10 %	Bird Cage, Sargent's list	Pencils, Faber's Carpenters' High list, dis 40&20 % Round Gilt \$\sqrt{g}\ \text{g}\ \text{gross} \ \partial{\partial{g}\ \text{gross}} \ \ dis 40 & 10 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
3,25 each dis 10 %  3,25 each dis 10 %  4,00 each net  4,75 each net  4,75 each net  5,25 dis 10 %  5,00 each dis 10 %  6,00 each dis 10 %	Bird Cage, Sargent's list	Pencils, Faber's Carpenters' High list, dis 40&20 % Round Gilt \$\sqrt{g}\ \text{g}\ \text{gross} \ \partial{\partial{g}\ \text{gross}} \ \ dis 40 & 10 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
3.25 each   dis 10 %	Bird Cage, Sargent's list	Pencils. Faber's Carpenters' High list, dis 40210 %  Paper's Carpenters' High list, dis 40210 %  Round Gilt
3.25 each   dis 10 %	Bird Cage, Sargent's list	Pencils. Faber's Carpenters' High list, dis 40210 %  Paper's Carpenters' High list, dis 40210 %  Round Gilt
3.25 each   dis 10 %	Bird Cage, Sargent's list	Pencils. Faber's Carpenters' High list, dis 402x0 % Round Gilt \$\frac{1}{2} \text{ gross \$2,37 nes}\$  Dixon's Lead. \$\frac{1}{2} \text{ gross \$3,37 nes}\$  Dixon's Carpenters' \$\frac{1}{2} \text{ gross \$4,9 nes}\$  Practing, States, \$\frac{1}{2} \text{ gross \$4,9 nes}\$  Return \$\frac{1}{2} \text{ gross \$4,9 nes}\$  Hearth \$\frac{1}{2} \text{ gross \$4,9 nes}\$  Procelain Head, Sargent's List \$\text{ dis 502x0 \$2}\$  Porcelain Head, T. & S. Mfg. Co. \$\text{ dis 502x0 \$2}\$  Practing Head, T. & S. Mfg. Co. \$\text{ dis 502x0 \$2}\$  Niles' Fatent. \$\text{ dis 502x0 \$2}\$  Plasiting Head, T. & S. Mfg. Co. \$\text{ dis 302x0 \$2}\$  Plasiting Machines. \$\text{ doz \$10.00, net}\$  Astor Plaiting Machines. \$\text{ each \$15.00, dis 30 \$3}\$  Planes and Plane Irons. \$\text{ dis 302x1/4 \$3}\$  Bench, First Quality. \$\text{ dis 302x1/4 \$3}\$  Moulding. \$\text{ dis 302x1/4 \$3}\$  Moulding. \$\text{ dis 302x1/4 \$3}\$  Ballev's (Staniey R. & L. Co.) new tist Jan, '79, dis 702x10 \$2\$  Plane lrons, Butcher's. \$\text{ dis 202x0 \$3}\$  Plane lrons, Butcher's. \$\text{ \$5.50 to 2}\$  Plane lrons, Butcher's. \$\text{ \$5.50 to 2}\$  Plane lrons, Butcher's. \$\text{ \$5.50 to 2}\$  The Globe Mfg. Co. Baldwin 100 \$100 \$250 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$1
3.25 each   dis 10 %	Bird Cage, Sargent's list	Pencils. Faber's Carpenters' High list, dis 402x0 % Round Gilt \$\frac{1}{2} \text{ gross \$2,37 nes}\$  Dixon's Lead. \$\frac{1}{2} \text{ gross \$3,37 nes}\$  Dixon's Carpenters' \$\frac{1}{2} \text{ gross \$4,9 nes}\$  Practing, States, \$\frac{1}{2} \text{ gross \$4,9 nes}\$  Return \$\frac{1}{2} \text{ gross \$4,9 nes}\$  Hearth \$\frac{1}{2} \text{ gross \$4,9 nes}\$  Procelain Head, Sargent's List \$\text{ dis 502x0 \$2}\$  Porcelain Head, T. & S. Mfg. Co. \$\text{ dis 502x0 \$2}\$  Practing Head, T. & S. Mfg. Co. \$\text{ dis 502x0 \$2}\$  Niles' Fatent. \$\text{ dis 502x0 \$2}\$  Plasiting Head, T. & S. Mfg. Co. \$\text{ dis 302x0 \$2}\$  Plasiting Machines. \$\text{ doz \$10.00, net}\$  Astor Plaiting Machines. \$\text{ each \$15.00, dis 30 \$3}\$  Planes and Plane Irons. \$\text{ dis 302x1/4 \$3}\$  Bench, First Quality. \$\text{ dis 302x1/4 \$3}\$  Moulding. \$\text{ dis 302x1/4 \$3}\$  Moulding. \$\text{ dis 302x1/4 \$3}\$  Ballev's (Staniey R. & L. Co.) new tist Jan, '79, dis 702x10 \$2\$  Plane lrons, Butcher's. \$\text{ dis 202x0 \$3}\$  Plane lrons, Butcher's. \$\text{ \$5.50 to 2}\$  Plane lrons, Butcher's. \$\text{ \$5.50 to 2}\$  Plane lrons, Butcher's. \$\text{ \$5.50 to 2}\$  The Globe Mfg. Co. Baldwin 100 \$100 \$250 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$1
3.25 each   dis 10 %	Bird Cage, Sargent's list	Pencils. Faber's Carpenters' High list, dis 402x0 % Round Gilt \$\frac{1}{2} \text{ gross \$2,37 nes}\$  Dixon's Lead. \$\frac{1}{2} \text{ gross \$3,37 nes}\$  Dixon's Carpenters' \$\frac{1}{2} \text{ gross \$4,9 nes}\$  Practing, States, \$\frac{1}{2} \text{ gross \$4,9 nes}\$  Return \$\frac{1}{2} \text{ gross \$4,9 nes}\$  Hearth \$\frac{1}{2} \text{ gross \$4,9 nes}\$  Procelain Head, Sargent's List \$\text{ dis 502x0 \$2}\$  Porcelain Head, T. & S. Mfg. Co. \$\text{ dis 502x0 \$2}\$  Practing Head, T. & S. Mfg. Co. \$\text{ dis 502x0 \$2}\$  Niles' Fatent. \$\text{ dis 502x0 \$2}\$  Plasiting Head, T. & S. Mfg. Co. \$\text{ dis 302x0 \$2}\$  Plasiting Machines. \$\text{ doz \$10.00, net}\$  Astor Plaiting Machines. \$\text{ each \$15.00, dis 30 \$3}\$  Planes and Plane Irons. \$\text{ dis 302x1/4 \$3}\$  Bench, First Quality. \$\text{ dis 302x1/4 \$3}\$  Moulding. \$\text{ dis 302x1/4 \$3}\$  Moulding. \$\text{ dis 302x1/4 \$3}\$  Ballev's (Staniey R. & L. Co.) new tist Jan, '79, dis 702x10 \$2\$  Plane lrons, Butcher's. \$\text{ dis 202x0 \$3}\$  Plane lrons, Butcher's. \$\text{ \$5.50 to 2}\$  Plane lrons, Butcher's. \$\text{ \$5.50 to 2}\$  Plane lrons, Butcher's. \$\text{ \$5.50 to 2}\$  The Globe Mfg. Co. Baldwin 100 \$100 \$250 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$1
3.25 each   dis 10 %	Bird Cage, Sargent's list	Pencils. Faber's Carpenters' High list, dis 402x0 % Round Gilt \$\frac{1}{2} \text{ gross \$2,37 nes}\$  Dixon's Lead. \$\frac{1}{2} \text{ gross \$3,37 nes}\$  Dixon's Carpenters' \$\frac{1}{2} \text{ gross \$4,9 nes}\$  Practing, States, \$\frac{1}{2} \text{ gross \$4,9 nes}\$  Return \$\frac{1}{2} \text{ gross \$4,9 nes}\$  Hearth \$\frac{1}{2} \text{ gross \$4,9 nes}\$  Procelain Head, Sargent's List \$\text{ dis 502x0 \$2}\$  Porcelain Head, T. & S. Mfg. Co. \$\text{ dis 502x0 \$2}\$  Practing Head, T. & S. Mfg. Co. \$\text{ dis 502x0 \$2}\$  Niles' Fatent. \$\text{ dis 502x0 \$2}\$  Plasiting Head, T. & S. Mfg. Co. \$\text{ dis 302x0 \$2}\$  Plasiting Machines. \$\text{ doz \$10.00, net}\$  Astor Plaiting Machines. \$\text{ each \$15.00, dis 30 \$3}\$  Planes and Plane Irons. \$\text{ dis 302x1/4 \$3}\$  Bench, First Quality. \$\text{ dis 302x1/4 \$3}\$  Moulding. \$\text{ dis 302x1/4 \$3}\$  Moulding. \$\text{ dis 302x1/4 \$3}\$  Ballev's (Staniey R. & L. Co.) new tist Jan, '79, dis 702x10 \$2\$  Plane lrons, Butcher's. \$\text{ dis 202x0 \$3}\$  Plane lrons, Butcher's. \$\text{ \$5.50 to 2}\$  Plane lrons, Butcher's. \$\text{ \$5.50 to 2}\$  Plane lrons, Butcher's. \$\text{ \$5.50 to 2}\$  The Globe Mfg. Co. Baldwin 100 \$100 \$250 \$500 \$100 \$100 \$100 \$100 \$100 \$100 \$1
3.25 each dos 10 fe	Bird Cage, Sargent's list	Penclis, Paber's Carpenters'
3.25 each dos 10 fe	Bird Cage, Sargent's list	Penclis, Paber's Carpenters'
3.25 each   dis 10 %	Bird Cage, Sargent's list	Penclis, Paber's Carpenters'
3.25 each   dis 10 %	Bird Cage, Sargent's list	Penclis, Paber's Carpenters'
3.25 each   dis 10 %	Bird Cage, Sargent's list	Penclis, Paber's Carpenters'
3.25 each   dis 10 %	Bird Cage, Sargent's list	Penclis, Paber's Carpenters'
3.25 each   dis 10 %	Bird Cage, Sargent's list. dis 60&10 S Cotton. Hatented (N. Y. Maillet & Handle Wks), dis 50 S Cotton (Humason & Beckley Mfz. Co.). dis 40 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Clothes Line Sargent's Hist. did 50&10 S Clothes Line Sargent's Hist. did 50&10 S Celling. ) Sargent's Hist. did 50&10 S Celling. ) Sargent's Hist. did 50&10 S Celling. ) Sargent's Hist. did 50&10 S Coat and Hist. did 50&10 S Wrought Staples and Hooks and Staples, did 50&10 S Wrought Staples and Hooks and Staples, did 50&10 S Wrought Staples and Hooks and Staples, did 50&10 S Wrought Staples and Hooks and Staples, did 50&10 S Wrought Staples and Hooks and Staples, did 50&10 S Wrint Screw Hooks and Eyes, new Hist. did 50&10 S Wrint Screw Hooks and Eyes, new Hist. did 50&10 S Wrint Screw Hooks and Eyes, new Hist. did 50&10 S Wrint Screw Hooks and Eyes 250 240 240 250 History Himshed.  Will Brass did 50&10 S Wrint Screw Hooks and S Wrought Staples S Wrint Screw Hooks and S Wrought Staples And S Wrought Staples S Wrint S Wrought Staples S Wrought S Wr	Penclis, Faber's Carpenters'
3.25 each   dis 10 %	Bird Cage, Sargent's list. dis 60&10 S Cotton. Hatented (N. Y. Maillet & Handle Wks), dis 50 S Cotton (Humason & Beckley Mfz. Co.). dis 40 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Belt. (new Hist Dec. 24. 187a.). did 50&10 S Clothes Line Sargent's Hist. did 50&10 S Clothes Line Sargent's Hist. did 50&10 S Celling. ) Sargent's Hist. did 50&10 S Celling. ) Sargent's Hist. did 50&10 S Celling. ) Sargent's Hist. did 50&10 S Coat and Hist. did 50&10 S Wrought Staples and Hooks and Staples, did 50&10 S Wrought Staples and Hooks and Staples, did 50&10 S Wrought Staples and Hooks and Staples, did 50&10 S Wrought Staples and Hooks and Staples, did 50&10 S Wrought Staples and Hooks and Staples, did 50&10 S Wrint Screw Hooks and Eyes, new Hist. did 50&10 S Wrint Screw Hooks and Eyes, new Hist. did 50&10 S Wrint Screw Hooks and Eyes, new Hist. did 50&10 S Wrint Screw Hooks and Eyes 250 240 240 250 History Himshed.  Will Brass did 50&10 S Wrint Screw Hooks and S Wrought Staples S Wrint Screw Hooks and S Wrought Staples And S Wrought Staples S Wrint S Wrought Staples S Wrought S Wr	Penclis, Faber's Carpenters'
3.25 each   dis 10 %	Bird Cage, Sargent's list	Penclis, Faber's Carpenters'
3.25 each   dis 10 %	Bird Cage, Sargent's list	Penclis, Faber's Carpenters'
3.25 each 4.00 each net 4.75 each well to 5.5 6.50	Bird Cage, Sargent's list	Penclis, Faber's Carpenters'
3.25 each 4.00 each net 4.75 each well to 5.5 6.50	Bird Cage, Sargent's list	Penclis, Faber's Carpenters'
3.25 each 4.00 each net 4.75 each well to 5.5 6.50	Bird Cage, Sargent's list	Penclis, Paber's Carpenters'
3.25 each 4.00 iii jo 5 6.50 iii jo 5 6.50 iii jo 5 6.50 iii jo 6 4.00 each net 4.76 each dis 10 5 6.00 each	Bird Cage, Sargent's list. dis 60&10 \$ Cotton. Patented (N. Y. Mailer & Handle Wks), dis 50 Cotton (Humason & Beckley Mfz. Co.). dis 40 \$ Belt. (new list Dec. 24. 1870.). dis 60&10 \$ Cotton (Humason & Beckley Mfz. Co.). dis 40 \$ Belt. (new list Dec. 24. 1870.). dis 60&10 \$ Ent. (new list Dec. 24. 1870.). dis 60&10 \$ Ent. (new list Dec. 24. 1870.). dis 60&10 \$ Ent. (new list Dec. 24. 1870.). dis 10 \$ Ent. (new list Dec. 24. 1870.). dis 10 \$ Ent. (new list Dec. 24. 1870.). dis 10 \$ Ent. (new list Dec. 25. 25. 25. 25. 25. 25. 25. 25. 25. 25	Penclis, Paber's Carpenters'
3.25 each dis 10 % di	Bird Cage, Sargent's list. dis 60&10 \$ Cotton. Patented (N. Y. Mailer & Handle Wks), dis 50 Cotton (Humason & Beckley Mfz. Co.). dis 40 \$ Belt. (new list Dec. 24. 1870.). dis 60&10 \$ Cotton (Humason & Beckley Mfz. Co.). dis 40 \$ Belt. (new list Dec. 24. 1870.). dis 60&10 \$ Ent. (new list Dec. 24. 1870.). dis 60&10 \$ Ent. (new list Dec. 24. 1870.). dis 60&10 \$ Ent. (new list Dec. 24. 1870.). dis 10 \$ Ent. (new list Dec. 24. 1870.). dis 10 \$ Ent. (new list Dec. 24. 1870.). dis 10 \$ Ent. (new list Dec. 25. 25. 25. 25. 25. 25. 25. 25. 25. 25	Penclis, Paber's Carpenters'
3.25 each 4.00 each net 4.76 each well to 75 6.50	Bird Cage, Sargent's list. dis 60&10 \$ Cotton. Patented (N. Y. Mailer & Handle Wks), dis 50 Cotton (Humason & Beckley Mfz. Co.). dis 40 \$ Belt. (new list Dec. 24. 1870.). dis 60&10 \$ Cotton (Humason & Beckley Mfz. Co.). dis 40 \$ Belt. (new list Dec. 24. 1870.). dis 60&10 \$ Ent. (new list Dec. 24. 1870.). dis 60&10 \$ Ent. (new list Dec. 24. 1870.). dis 60&10 \$ Ent. (new list Dec. 24. 1870.). dis 10 \$ Ent. (new list Dec. 24. 1870.). dis 10 \$ Ent. (new list Dec. 24. 1870.). dis 10 \$ Ent. (new list Dec. 25. 25. 25. 25. 25. 25. 25. 25. 25. 25	Penclis, Paber's Carpenters'
3.25 each 4.00 iii so 5 4.00 each net 4.75 each net 6.00 each dis 10 5 6.00 each dis 10 6 6.00 each dis 10	Bird Cage, Sargent's list. dis 60&10 S Cotton. Patented (N. Y. Mailer & Handle Wks), dis 50 Cotton (Humason & Beckley Mfz. Co.). dis 40 S Bolt. (new list Dec. 24. 1870.). dis 60&10 S Bolt. (new list Dec. 24. 1870.). dis 60&10 S Bolt. (new list Dec. 24. 1870.). dis 60&10 S Bolt. (new list Dec. 24. 1870.). dis 60&10 S Ement—Hotchkiss' \$5.00 \$4.00 dis 10 S " Weston's, No. 1, \$10.00; No. 2, \$9.00 \$4.00 dis 10 S " Weston's, No. 1, \$10.00; No. 2, \$9.00 \$4.00 dis 10 S " McGill's, \$5.00 \$4.00 dis 20 S " McGill's, \$5.00 \$4.00 dis 20 S " Reading list. dis 60&10 S " Reading list. dis 60&10 S Celling. / Sargent's list. dis 60&10 S Eling. / Sargent's list. dis 60&10 S Coat and Hat, Sargent's list. dis 60&10 S Coat and Hat, Sargent's list. dis 60&10 S Floture Hoos, Browns Fals Solid Brass, \$4 per gross. Tassel (T. & S. Mfr. Co.). dis 40 S Wrought Staples and Hooks and Staples, dis 60&10 S Wrought Staples and Hooks and Staples, dis 60&10 S Wrought Staples and Hooks and Staples, dis 60&10 S Wrought Staples and Hooks and Staples, dis 60&10 S Wrought Staples and Hooks and Staples, dis 60&10 S Wrought Staples and Hooks and Staples, dis 60&10 S Wrought Staples And Eyes, new list. dis 60&10 S Wrought Staples and Hooks and Staples, dis 60&10 S Wrought Staples, and Eyes, new list. dis 60&10 S Wrought Staples, and Eyes, new list. dis 60&10 S Wrought Staples, and Eyes, new list. dis 60&10 S Wrought Staples and S Wrought Staples and Books and Eyes, new list.  **Staples, Stanley's list. dis 60&10 S Wrought Staples and Books and Eyes, new list.  **Brinished.**  **Pinished.**  **Pini	Penclis, Paber's Carpenters'
3.25 each 4.00 each net 4.76 each well to 5.5 4.00 each net 4.77 each net 8.28 c, dis 10 5 5.00 each, dis 10 5 8.00 each, dis 10 5 8.00 each dis 10 5 6.00 8.15 each net 8.10 each net 8	Bird Cage, Sargent's list. dis 60&10 S Cotton. Patented (N. Y. Mailer & Handle Wks), dis 50 Cotton (Humason & Beckley Mfz. Co.). dis 40 S Bolt. (new list Dec. 24. 1870.). dis 60&10 S Bolt. (new list Dec. 24. 1870.). dis 60&10 S Bolt. (new list Dec. 24. 1870.). dis 60&10 S Bolt. (new list Dec. 24. 1870.). dis 60&10 S Ement—Hotchkiss' \$5.00 \$4.00 dis 10 S " Weston's, No. 1, \$10.00; No. 2, \$9.00 \$4.00 dis 10 S " Weston's, No. 1, \$10.00; No. 2, \$9.00 \$4.00 dis 10 S " McGill's, \$5.00 \$4.00 dis 20 S " McGill's, \$5.00 \$4.00 dis 20 S " Reading list. dis 60&10 S " Reading list. dis 60&10 S Celling. / Sargent's list. dis 60&10 S Eling. / Sargent's list. dis 60&10 S Coat and Hat, Sargent's list. dis 60&10 S Coat and Hat, Sargent's list. dis 60&10 S Floture Hook Reading list. dis 20&10 S Gross. A Hower Park Solid Brass, \$4 per gross. Tassel (T. & S. Mfz. Co.). dis 40 S Wrought Staples and Hooks and Staples, dis 60&10 S Wrought Staples and Hooks and Staples, dis 60&10 S Wrought Staples and Hooks and Staples, dis 60&10 S Wrought Staples and Hooks and Staples, dis 60&10 S Wrought Staples And Eyes, new list. dis 60&10 S Wrought Staples And Eyes, new list. dis 60&10 S Wrought Staples And Eyes, new list. dis 60&10 S Wrought Staples And Eyes, new list. dis 60&10 S Wrought Staples And Eyes, new list. dis 60&10 S Wrought Staples And Eyes, new list. dis 60&10 S Wrought Staples And Eyes, new list. dis 60&10 S Wrought Staples And Eyes, new list. dis 60&10 S Wrought Staples And Eyes, new list. dis 60&10 S Wrought Staples And Eyes, new list. dis 60&10 S Wrought Staples And Eyes, new list. dis 60&10 S Wrought Staples And Eyes, new list. dis 60&10 S Wrought Staples And Eyes, new list. dis 60&10 S Wrought Staples And Eyes, new list. dis 60&10 S Wrought Staples And Eyes, new list. dis 60&10 S No. 5 2 9 40 50 27 29 20 20 20 20 20 20 20 20 20 20 20 20 20	Penclis, Paber's Carpenters'
3.25 each 4.00 each net 4.76 each well to 5.5 4.00 each net 4.77 each net 8.28 c, dis 10 5 5.00 each, dis 10 5 8.00 each, dis 10 5 8.00 each dis 10 5 6.00 8.15 each net 8.10 each net 8	Bird Cage, Sargent's list. dis 60&10 S Cotton. Patented (N. Y. Mailer & Handle Wks), dis 50 S Cotton (Humason & Beckley Mfz. Co.). dis 40 S Belt. (new Hist Dec. 24. 1870.). dis 60&10 S Belt. (new Hist Dec. 24. 1870.). dis 60&10 S Belt. (new Hist Dec. 24. 1870.). dis 60&10 S Ell. (new Hist Dec. 24. 1870.). dis 60&10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 20 S Ell.	Penclis, Paber's Carpenters' High list, dis 402x0 % Dixon's Leavest Round Gilt
3.25 each 4.00 each net 4.76 each well to 5.5 4.00 each net 4.77 each net 8.28 c, dis 10 5 5.00 each, dis 10 5 8.00 each, dis 10 5 8.00 each dis 10 5 6.00 8.15 each net 8.10 each net 8	Bird Cage, Sargent's list. dis 60&10 S Cotton. Patented (N. Y. Mailer & Handle Wks), dis 50 S Cotton (Humason & Beckley Mfz. Co.). dis 40 S Belt. (new Hist Dec. 24. 1870.). dis 60&10 S Belt. (new Hist Dec. 24. 1870.). dis 60&10 S Belt. (new Hist Dec. 24. 1870.). dis 60&10 S Ell. (new Hist Dec. 24. 1870.). dis 60&10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 20 S Ell.	Penclis, Paber's Carpenters' High list, dis 402x0 % Dixon's Leavest Round Gilt
3.25 each 4.00 each net 4.76 each well to 5.5 4.00 each net 4.77 each net 8.28 c, dis 10 5 5.00 each, dis 10 5 8.00 each, dis 10 5 8.00 each dis 10 5 6.00 8.15 each net 8.10 each net 8	Bird Cage, Sargent's list. dis 60&10 S Cotton. Patented (N. Y. Mailer & Handle Wks), dis 50 S Cotton (Humason & Beckley Mfz. Co.). dis 40 S Belt. (new Hist Dec. 24. 1870.). dis 60&10 S Belt. (new Hist Dec. 24. 1870.). dis 60&10 S Belt. (new Hist Dec. 24. 1870.). dis 60&10 S Ell. (new Hist Dec. 24. 1870.). dis 60&10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 10 S Ell. (new Hist Dec. 24. 1870.). dis 20 S Ell.	Penclis, Paber's Carpenters' High list, dis 402x0 % Round Git

State State

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November 4, 1880.	
Rail. Riding Door Wrought Brass # D 42c dis 20;	Spoke Mhaves. Defiance Metallic
parn DoorInch	Speke Mhaves,   Defiance Metalite
Brail, Med. Large.   Per 100 feet \$2.10   2.70   3.30 - net   Razors.   R. Torrey Razor Co	Spoke Trimmers.
Mazer Strape.	
milication Emerson   dis 40	Basting
Badger's (not Emerson).	The Wm. nowers Mfg. Co
# Rivers	German Silver
Nos. 7 8 9 10 11 13 13 14 14 14 15 15 16 160 too too too too too too too too too to	Tin Cowles Hdw. Co.)
Rivet Sets	
Rollers.	wand stone w m oc. dis 33/4610 7
Kope- Manufacturers' Net List. Sept. 20, 1887. 20, 21114	Washita Stone (Boyd & Chase) No. 1 # B 14c net Slips (Boyd & Chase)
Tar'd Rope	Arkansas Stone No. 1, 4 to 5 in
Carn Door, Sargent's list	Lake Superior (Boyd & Chase) B 200, dis roles
Hay Rope Boxwood. Ivory (hapin's. Standard. Stanley. Stephens.  # 2 to 66  Boxwood.  Ivory dis 6:&10 %	Stove Polish. Joseph Dixon's
stantey	Stove Polish.
Ind Irons.  From 4 to 1 lbs.  If Heating.  Tailors'  Gleason's Shield and Toilet.  Gleason's Shield and Toilet.  Gleason's Heating.  Futerprise Patent Cold Handle.  Gleason's G	Dison's Plumbage
Mrs. Pott's Pat. Cold Handle, "Crown"	Steel
Sand Paper.  Sand	Winterbottom's Try and Mitredis 20&10 5
	Tinned Swedes Tacks. dis 35 % Tianed American ' dis 44 % Swedes Tacks, all kinds. dis 20 % Copper Tacks and Nails dis 20 %
Sizah Cord.   F B 14 @ 200 net   Common.   F B 14 @ 200 net   Patent.   F B 15	Swedes Hungarian Nalis
Raw Hide	Trunk and Clout Nails dis 15 \$\ Common and Patent Brads dis 15 \$\ Bosket Nails dis 15 \$\ Brush Teaks dis 15 \$\
Steel Ribbon.  Als 10.5  Ansh Locks. Clark's, No. 1, \$10.00   No. 2, \$3.00 per gross dis 31/4 \$7  Fercuson's dis 33/4 \$7  Walker's dis 33/4 \$7  Walker's dis 33/4 \$7  Walker's dis 32/4 \$7  Northup Window Springs dis 32/4 \$7  Northup Window Springs dis 32/4 \$7  The Perfect, Clark & Smith, Plain sap d' gro \$10.00 net  "Nickel-Plated \$ gro 27.00 net  Sash Weights—Solid Eves, in 500 \$8 iots	Loathered Carpet Tacks
Hammond's Window Springs\$0.00 per gross, dis 10 % Northup Window Springs\$0.00 per gross, dis 10 % The Perfect, Clark & Smith, Plain Jap'd # gro \$10.00 net "Por.Knob Jap'd.# gro 14.00 net	Winterbottom's Try and Mitre dis sokio?  Tackts, Brads, &c. List of April 2, 1880 Tinned Swedes Tacks. dis 35 % Tinned Swedes Tacks. dis 40 % Swedes Tacks and Kinds. dis 40 % Copper Tacks and Nails. dis 25 % Americap dis 20 % Americap dis 20 % Gimp and Lace Tacks. dis 25 % Finishing Nails. dis 15 % Finishing Nails. dis 15 % Common and Patont Brads. dis 15 % Common and Patont Brads. dis 15 % Brake Nails. dis 15 % Branh Tacks. dis 25 % American Cut Tacks. dis 25 % American Cut Tacks. dis 25 % Chair Nails. dis 25 % Chair Tack List goods. dis 26 % Double-Pointed Tacks dis 40 % Tap Borers.
Sash Weights.—Solid Eyes, in 500 % lots and over	Common and Ringdis 15 tives' Tap Borersdis 15 tives'
and over # 1.5 sqc and Miles # dos \$10, dis 30 \$10 Miles # dos \$10, dis 30 \$10 Miles # dos \$10, dis 30 \$10 Miles # dos, No. 15; No. 0, \$21, dis 30 \$10 Miles # dos, No. 15; No. 0, \$21, dis 30 \$10 Miles # dos, No. 15; No. 0, \$21, dis 30 \$10 Miles # dis 25 \$10 Mile	Tapes, Measuring. American dis 20 % Spring Tapes dis 25 %
Enterprise Mfg. Co	Thermometers. Tin Case dis 652 to 9 Tobacco Cutters.
Mill   dis 3 5 8     Mill   dis 3 5 8	Tebacce Cutters,
One-Man, all lengths,	Toe Cniks.—Winsted
Wheeler & Ciemson Mig. Co.'s Hand	Tools (P. S. & W.)
Nos 101 102 103 104 105 Per doz. \$10.00 5.40 10.00 7.40 5.24 net	Praps. Game. Newhouse
Silver's	Traps.   dis ve   Game. Newhouse   hater   dis ve   S   S   Newhouse   Pattern   dis ve   S   S   Blake's Patent.   dis 40   S   S   S   Blake's Patent.   dis 40   S   Mouse, Weed. Choker   F   dos holes, 16   Game   Game   F   dos \$1.0, dis 10   S   Game   G
Naw   Net   Name   Na	Rat. "Decoy"
Common Lover	Trewels. Lothrops Brick and Plastering. dis 20 S Read's Brick and Plastering. dis 16 S Disston's Brick and Plastering. dis 20 S Clement & Maynard's dis 20 S Clement & Maynard's dis 20 S Clement & Maynard's dis 20 S Roae's Brick. dis 15 S Brick dis 20 S Worrall's Brick and Plastering. dis 20 S Garden dis 45 S
Bemis & Cali Co.'s New Pat dis 40& 5  Bemis & Cali Co.'s Lever & Spring nammer.dis 30& 5  Plate	Clement & Maynard's
Aiken's Genuine	Garden
Imitation. \$700. dis 20 \$ Bart's Patest Lever. dis 20 \$ Disston's. dis 20 \$ Disston's. dis 20 \$ Scales. dis 20 \$ Scales. dis 20 \$ Tes. No. 181. \$700 \$11.00 \$12.00 \$10.00	Wiess, Beild BoxList. of July 1, '79 dis 24 & "Crown" (A. H. Hildick) 40 to 100 5, 150 net
Union Platform	Parallel, Parker's
Chatilion's Grocers'	# Bargent's dis 55 kie \$ # Trenton dis 20 \$ # Backus and Union dis 40 \$ # Oval Side dis 40 \$
"Turnbull's	Pisher & Norris   dis 16 % 16 % 16 % 16 % 16 % 16 % 16 % 16
Adjustable Box Scraper (S. R. & L. Co.), \$6. 40. dis 20&10 \$ Box, 1 Handle	"Family." List
Foot. dis 70&10 % Ship (common). per dos \$3.00 net " (Providence Tool Co. dis 10 \$	Lowell Mand Vises
Screw Drivers.  Douglass Mfg. Co	Washer Cutters
Buck Bros dis 25 % Stanley Rule & Level Com, Varnished Hdla dis 502 to 5 Black Handles dis 402 to 5 Sargent & Co.'s dis 402 to 5	Washers.—See Nuts and Washers. Well Wheels.—Revised list
Rerew Brivers.  Duglass Mfg. Co	Wire- Brass and Copper List of June 10. 1880dis 20 g Bright and Annealed Nos. 0 @ 18. dis45 @ 10 ≤
Nos. 4 and codis 30 % Screws. Flat H'd Irondis 44 %	Nos. 27 @ 30.dia 60 @ 65 S   Coppered
Fias Head Brass. dis 45 % Reund Head Brass. dis 30 % Brass and Silver Capped dis 40 %	Tinned. Nos. o to 18
Coach Patent Gimiet Point, List per 100dis 50@55 8  Bed	Grape, Nos. 10 to 14
Bench, Iron	Staples
Hand dis zekto \$ Hand Rail, sargent's dis zekto \$ Hand Rail, sargent's dis sokrekto \$ " Humason, Beckley & Cos dis cc " Am. Screw Co dis 55	Tuesday & Saymons Mfg. Co. Blothes With All Bet
Screw Window Balances. R. B. Hugunin's	Clothes Line Wire. Galvanised © coli 3-2400 net Wire Cloth, greenand drab F sq. ft, 3% c net
Scroil Saws.  Lester, \$10,0	American Adjustabledis 48 \$
Shears and Scissors.  American (Cast) Iron	Coes Genuine   .
Barnard's Lamp Tviumers. # doz \$3,75 Tinners' dis 10 % Beymour's, List, Nov. 25, 1879. dis 60 % Heinsch's dis 60 %	Bemis & Call's Patent Combination
Mass. Cutlery Co. St. Trimmers	Van Wagoner & Williams' Basin
Sheaves. Bilding Door, M. W. & Co., list	Webster's Pat. Combination
Russell's Anti-Frictiondis 60&10&2 g Moore's Anti-Frictiondls 40 g Sliding Shutter, R. & E. list	NO. 1 03.00 NO. 116 71.00 NO. 1 33.00 NO. 8 33.00
Moore's Anti-Friction (Hanging)	** No. 12.
Shovels and Spades.   dis 10	No. 1, 4 51.00 No. 2)4 with Cogs. 62.00 No. 2)4 No. 2, 4 62.00
Row   and 's	Universal, XX No. 346 Fet dos. \$20,00 No. 2 \$20,00 No. 2 \$0,00 No. 2 \$0,00 No. 1 \$0,00 No. 2 \$0,00 No.
Polished Stool	Sureka, No. 1. 4700 Sureka, No. 1. 4700 Sovery, No. 10, with Cog Wheels 60.00 Exceller, No. 2, with Folding Bench 75.00 De. E. for Set Tube. 9.00
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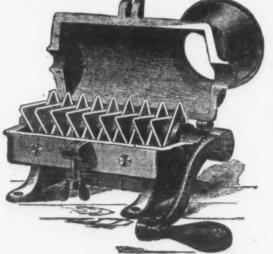
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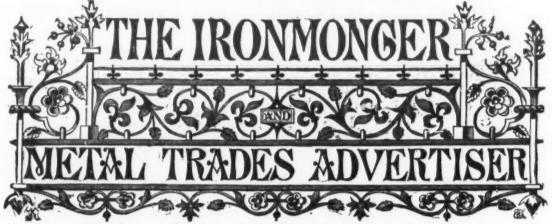
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Cylinder Brick, &c., &c. M. D. Valentine & Bro

FIRE BRICK **And Furnace Blocks** 

DRAIN PIPE & LAND TILE. Woodbridge, - - - N. J.

BORGNER & O'BRIEN.

# FIRE BRICK

Edge Pressed Furnace Blocks, CLAY RETORTS, THES, &c.,
Twenty-third Street,
Above Race, PHILADELPHIA.
Twenty years' practical Experience.

# PERTH AMBOY TERRA COTTA CO.,

A. HALL & SONS, Perth Amboy, N. J., ARCHITECTURAL TERRA COTTA

FIRE BRICK.

### BROOKLYN

Clay Retort and Fire Brick Works, (EDWARD D. WHITE & CO.)

Manufacturers of Clay Betorts, Fire Brick, Gas House and other Tile. VAN DYKE, EL ZABETH, RICHARDS & PARTITION STS. Office, 88 Van Dyke St., Brooklyn, N. Y.

Watson Fire Brick Manufactory,

ESTABLISHED 1836. JOHN R. WATSON, Perth Amboy, New Jersey. Manufacturer of

FIRE BRICK,
For Rolling Mills, Blast Furnaces, Foundries,
Gas Works, Lime Klins, Tanneries, Boiler
and Grate Setting, Glass Works, &c.
Fire Clays, Fire Sand, and Kaolin for Sale.

# HENRY MAURER,

Excelsior Fire Brick & Clay

Retort Works,
Manufacturer of FIRE BRICK, HOLLOW
BRICK AND CLAY RETORTS.
WORKS: PERTU AMBOY, NEW JERSEY.
Office & Depot, 418 to 422 East 23d St., N. Y.

### TROY FIRE BRICK WORKS, JAMES OSTRANDER & SON, ESTABLISHED 1848, Manufacturers of

FIRE BRICK, Tiles, Blast Furnace Blocks, &c. Miners and in Woodbridge Fire Clay and Sand, and Staten

# GARDNER BROTHERS.

STANDARD SAVAGE FIRE BRICK, TILE & FURNACE BLOCKS

OF ALL SHAPES AND SIZES. Clay Gas Retorts and Retort Settings, and Miners and Shippers of Fire Clay. OFFICE: 116 Smithfield St., Pittsburgh, Pa. WORKS: Mt. Savage Junction, Md., and Lockport, Pa.

HALL & SONS,

# FIRE BRICK.

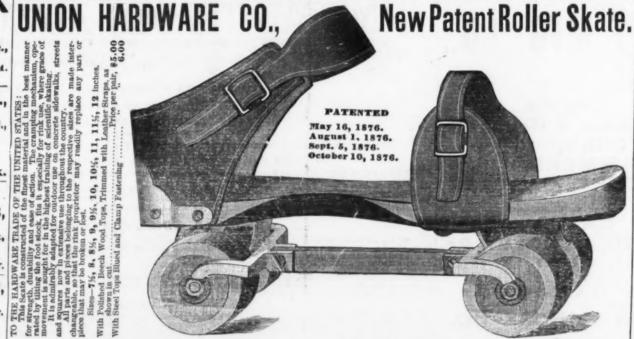
Buffalo, N. Y.



Watchman's Improved Time Detector, with Safety Lock Attachment.
Patented 1875-6-7.

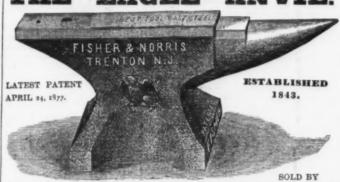






UNION HARDWARE CO., with Coulter, Flagler & Co. 87 CHAMBERS ST. and 69 READE ST., NEW YORK.

THE "EAGLE" ANVIL.



**WARRANTED!!** 

Better than the Best English Anvil.

Face in one piece, of BEST TOOL CAST STEEL PERFECTLY
WELDED, perfectly true; of hardest temper and never to come off
or "settle." It does not bounce the hammer back, and therefore
can do more work with lighter hammer. Horn of tough untempered
steel, never to break or bend. Only Anvil made in United States
fully warranted as above. None genuine without our trade-mark. PRICE LIST, APRIL 1, 1880.
ANVILS weighing 100 lbs. to 800 lbs.
SMALLER ANVILS ("MINIMS.")

Telghing about 40 50 60 70 50 90 lbs.

N. R.—These are the RETAIL PRICES. The only additional cost will be freight to the purchaser's place of residence.

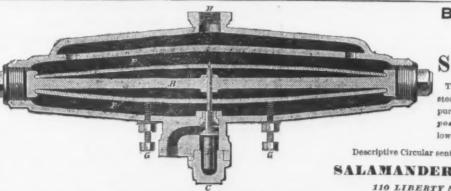
The No. cost is sitter-plated, and is mailed postpaid to any part of the residence. Size of Face, square 2 3 4 45 5 \$1.75 2.50 3.75 4.50 5.50 6 inches.

New York—RUSSELL & ERWIN MANUFACTURING COMPANY, DURRIE & McCARTY, TENNIS & WILSON.

Philadelphia—JAMES C. HAND & CO. Boston—GEORGE H GRAY & DANFORTH.

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BLAKE'S PATENT POSITIVE STEAM TRAP

This Trap is adapted to all places where team is used for heating or drying purposes. It is simple in construction, positive in its working, and much lower in price than any other Tran-

Descriptive Circular sent on application. Address

SALAMANDER GRATE BAR CO.,



WITH PATENT ADJUSTABLE ATTACHMENT. The only Saw that can be adjusted for either a One-Man or a Two-Man Saw. We make the following lengths, 31/2, 4, 41/2, 5 feet. Send for sample.

E. IMHAUSER. WHEELER, MADDEN & CLEMSON MFC, CO., Middletown, N. Y.

John T. Lewis & Bros. No. 231 South Front St., PHILADELPHIA.



MANUFACTURERS OF Pure White Lead, Red Lead, Litharge, Orange Mineral, Linseed Oil, AND PAINTERS' COLORS.

Brooklyn White Lead Co.



White Lead, Red Lead & Litharge. No. 182 Front Street, NEW YORK,

JOHN JEWETT & SONS. WHITE LEAD.



LINSEED OIL. 182 Front Street, NEW YORK.



The Atlantic White Lead and Linseed Oil Co.,

White Lead (Atlantic), Red Lead, Litharge & Linseed Oil. ROBERT COLCATE & CO., 287 Pearl Street, New York.



DUNBAR BROS.,

Clock Springs and Small Springs of every description, from best Cast St BRISTOL, CONN.

W. & J. TIEBOUT.

Manufacturers of

Brass, Galvanized & Ship Chandlery Hardware.

No. 33 Chambers St., New York. THOMAS MORTON, 65 Elizabeth Street, New York, Manufacturer of Copper and Iron

SASH CHAINS, With Patent Attachments.
Warranted for years. Chains of any size made to order, and trade surplied with liberal discounts.

PHILADELPHIA.	Speens.
(Corrected Weekly by Lloyd, Supplee & Walton.)	Speens.
Terms, 30 days. For 60 or 90 days, interest added at 10 per cent. per annum.  Anvils.	Tinned
Peter Wrights, \$\psi\$ \\ \text{D} \\ \text{Over 250 lbs} \\ \text{11c} \\ \text{Eagle (American)} \\ \text{10c} \\ \text{V} \\ \text{D} \\ \text{01i 20 S} \\ \text{20c} \\ \text{V} \\ \text{D} \\ \text{01i 20 S} \\ 0	Springs Torrey.   P doz \$2.10 10 \$
Apple Parers. Reystone Centennial, 1875	" No. 2, Medium Jap'd
Apple Parers   Reystone Centennial, 1875.   84.55   84.55   1877.   5.00   1877	Stove Polish, Gen
No. 78. 7.50 Rotary Peach Parers 14.50 Lots of 10 to 25 dozen special prices.	Tacks, Brads, &c
Axes.	Manage
Richland Chief	Im. Oneida—Newhouse list, first qual
Hunt's Kentucky and Yankee per doz \$1.00 Mann's Red Warrior 11.00 Richland Chief 10.00 Beveled Axes add soc net 22.00 Augers and Auger Bits. New List January I. Bates' Nut Augers dis 40 % Cook's Augers dis 40 % Cook's Augers dis 40 % Cook's Augers dis 1 % Benjamin Pierce Auger Bits dis 1 % Griswold Auger Bits dis 1 % Growld Auger Bits dis 40 % Cook's dis 4	Wrenches.—Agricultural
Watrous Ship Augers	Philada. Tool Co., Duplex
Cook's dis 40&10 \$ Jennings' dis 10, 10&10 \$ Jennings' dis 10, 10&10 \$ Bonney's Pat. Hol. Augers, list \$48 \$ dog. dis 26 \$10 \$	Bright or Ann'd, No. o to 18
Stearns' Pat. Hol. Augers, list \$48 \(\pi\) dozdis 20\(\pi\)10 Bniances. Light and Commondis 15\(\pi\)10 5	Bright or Ann'd, No. o to 18
Bevin Bros. Mfg. Co. Light Hand Bellsdis 60&10 % Swiss Pattern Hand Bellslow list dis 10&10 % Connell'Door Bells	Universal, No, 2½. 60.00
Bolt and Rivet Clippers.  Chambers' No. 1, for % bolteach, \$7.50  10 No. 2, 1 12 11 11 12 12 12 12 12 12 12 12 12 1	63.00
Upright, without Augers. List 5.50 dis 40 % Angular, without Augers	Merchant Iron.
Backus	TERMS.—Note or acceptance at 60 days, with current rate of exchange on New York, or a discount of 2 per cent. for cash, if remitted within 10 days from date of invoice.
Spofford dis 50&5 % American Bali	Flat Bar.
Cast Loose Joint, Narrow	136 to 4 by 36 to 1 inch
Acorn, Loose Pill	1 and 1% by % to % inch
Stanley, Wrought Shutter	1 to 176
Loose Joint	1 to 176.
Shepard	34 to 34
Chains.—German Halter and Coli, new list Oct. 22, 1879	% to 1½
Best Proof Coli Chain—English. # B foc net	76 to 114 inch
Blind Butts   California   Ca	% to 1% by 5-16 to 36 inch
Platedis 25&10 %	74 Inch, Nos. 13 and 14
Coffee Mills.—Box and Side, new list Jan. 1, 1880	The state of the s
Butlery.—Walden Pocket new list net Landers, Frary & Clark, J. Russell & Co., Lamson & Goodnow Mfg. Co. and Meriden Cutiery Co., Manu- de Co., Manu- prawing Knives.  Hart Mfg. Co. 3. dis 65&10 \$ Adjustable Handle. dis 1,5	Heavy Bands, 3½ to 6 by ¼ and 5-16 irch
facturers' prices net.  Prawing Knives.  Hart Mrc Co's	316 to 6 by 14 and 4-16 irch. 2.70 116 to 34 by 14 and 5-15 2.70 1 to 18 by 14 and 5-15 2.50 4 to 18 by 14 and 5-16 2.50 4 to 18 by 14 and 5-16 5.50 4 to 18 by 14 and 5-16 5.50
Adjustable Handle	% and % by % and %-16
Tinned dis 45 %  ₩ dos.₩3.50 4.00 4.50 5.00 5.40 6.00 7.50 5.00 10.00  No	154 to 6 by Nos. 11 and 12
# dos.#3.00 3.75 4.75 4.75 5.25 6.00 7.00 8.00 9.00 Fo 0 1 2 3 4 5 6 7 8	% and 13-16 by \% to 3-16
Nicholsondis 30 %	% and 11-16 by Nos. 11 and 12
Spencer	% and 3½ by ¾ and 5-16     3-9c       Light Bands.     3-0c       1½ to 6     by ½ to 3-16     3-0c       1½ to 6     by Nos. 11 and 12     3-1 [c       1½ to 1½ by ½ to 3-16     3-1 [c     3-1 [c       1 to 1½ by ½ to 3-16     3-2 [c     3-2 [c       ½ and 13-16 by ½ to 3-16     3-5 [c     3-5 [c       ½ and 11-16 by ½ to 3-16     3-5 [c     3-6 [c       ½ and 11-16 by Nos. 11 and 12     3-3 [c       ¾ and 0-16 by ½ to 3-16     4-5 [c       ¼ and 0-16 by ½ and 3-16     4-3 [c       ¾ inch by Nos. 11 and 12     4-6       ½ inch by Nos. 11 and 12     4-6       Hoop Iron.     4-6
Spencer   \$4.50 & 4.75 &   \$4.75 &	134 to 4, Nos. 19, 14 and 14
" —3 in. roll. " 6.50 (is 20 %)  Favorite com Fluter & Sad Iron. % down the part of the pa	14 to 2, No. 20
Ismmers. Yorkes & Plumb's, new list	19-16, 1, and 194, Nos. 13, 14 and 15
Yerkes & Plumb, new list	15-16, 1, and 1)-6, No. 21
Strap and T	%, Nos. 16, 17 and 18. 3.60 %, Nos. 19 and 20. 3.90 %, No. 21. 4.60
" Pol'ed & P't'd and Blued and Pointed, 31 28 2 25 24 23 Globe	36. No. 22
Ingres   Strap and T	13-16, Nos. 19 and 20. 4.10 13-16, No. 21 4.20 13-16, No. 22 4.30
Discount on Ausable and Clinton, 20 5; (floto, 105 octas and K nobes discount on Ausable and Clinton, 20 5; (floto, 105 octas and K nobes discount of the color of Gaviord Cabinet discount of Gavio	\$\frac{\text{sq}}{\text{sq}}\$ and \$\text{g}\$-(16 \text{by} \text{Nos. 11 and 12}{\text{sq}}\$ and \$\text{by}\$ \$\text{sq}\$ and \$\text{sq}\$ \$
American Padlocks	86, No. 22 4-30 11-16, Nos. 13, 14 and 16, 4-40 11-16, Nos. 16, 19 and 18, 4-40
No \$7 55 59 60 61 62 63 dis 60 % \$\text{\$\text{\$\sigma}\$ dos	11-16, Nos. 19 and 20. 4-30 11-16, No. 21. 4-10 11-16, No. 22. 4-50
anterns. Nail City	56, Nos. 13, 14 and 15
materna. Nail City	56, No. 21. 4.50 54, No. 22. 4.70 64, No. 23. 4.50
hwn Mewers.—Pennsylvaniadis 30&10 % Philadelphia	9-16, Nos. 13, 14 and 15 4.6c 9-16, Nos. 16, 17 and 18 4.6c 0-16, Nos. 10 and 20 4.70
awn and Garden Pumps. Holland PatentList \$5.00 dis 10 % attocks.	6-16, No. 21. 4.9c 9-16, No. 22 4.9c 9-16, No. 23. 4.6c
Long and Short Cutternew list Pennsylvania Patternper doz Jolasses Gates.	6 Inch, Nos. 13, 14 and 15. 4.80 16 1 Nos. 15, 17 and 18. 4.80 36 Nos. 10, 17 and 18. 4.90
Enterprise Mfg. Co.'s Measuring Faucetsdis 20 % Stebbins' Gatesdis 50&10 % Lincoln's	No. 21 5.20 No. 22 5.20 No. 23 5.30
Pennaylvania Patters	The prices under Hoop Iron do not apply to Cotton Ties.
eat Cutters.—Pennsylvania aleat Cutter. dis 50 % Dixon's	r-ioc per lb. extra will be charged for each gauge lighter than the lightest indivated. r-ioc per lb. extra will be charged for cutting floops to specified lengths.
stowedis 30 \$ Hale's new list, dis 40, 2&10 cush Americandis 25 \$	Barrel Hoops.
Stuffers	o to 11 lbs, per set of 6 hoops
716   15   17   15   17   15   17   15   17   15   17   15   17   15   17   15   17   15   17   17	Extras for Cutting to Length all Preceding Iron. All Iron, including Tire
salicy dis 20210 \$ ane Irons.—Ohio Tool Codis 108; \$ sutcher's	1.100   1.10
taniey's Adjustable	" Wings3.80 Sheet Iron.
American  Stuffers  July 25  Enterprise Stuffers  July 25  July	Common. Charcoal. Juniata. No. 10 to 143.40 5.00 6.60 No. 15 to 17380 5.10 6.60
ules	No. 18 to 21
# doz\$8.00 10.25 13.75 14.60 16.75 10.50	No. 27
unares.  Try Squares, Stanley  Try Squares, Stanley	No. 18 to 21
guares.  Steel and Iron	Nos. 14 to 20
Clipper No. 10, Bronsed Blade, Boxed and Sharpened	Nos. 14 to 20
Sharpened	4% by 56 by 5-162.00   1 by 56 by 5 163.50
Cross-Cut No. 2, Plain Toothdis 35 %  Patent Tooth	2/4, 3, 3/4 and 4 inch
n ws.—Dission's Hand, Panel and Rip	340 1% by 1 inch, for Plow Handles 3-80 1% by 4
" Hand, Panel and Ripdis 25 %	136 by 14 " " 3.80   3.90
No.   1   1   1   1   1   1   1   1   1	136 by %   T Rail.   Sec   Sec   Sec   Rail.   Sec   Sec   Sec   Rail.   Sec   Sec   Rail.   Sec   Sec   Rail.   Sec   Sec   Sec   Sec   Rail.   Sec
Grimthdis 40&10 % ad I rens.—4 to 10 lbs	splice Joints for 12, 15 and 20-lb. Rail, 40c each; 28 and 30 lb. Rail, 50c each; 40 lb., 60c each, 336 by 36 and 36 Splice for 20 and 28-lb. Rail
Washita Extra	236 by 5-16 "12 and 16-1b. "
** No. 2	134   Fat Rails Punched and Countersunk.   134 to 2 by 14 to 54 inch.   3.00 th by 14 and 7-16 inch.   3.20 th by 14 and 7-16 inch.   3.20 th by 14 and 7-16 inch.   3.20 th by 14 by 14 and 15 inch.   3.20 th by 15 15 inch
Turkey Oil Stone No. 1	Tuniate Wall Dade
Plat Head Iron discrete	Norway 5.60 Guard Iron, 16x34x36 and 36x36x36 4.00 Guard Iron, 16x36x36 4.00 Drag Bars 3.36 Dropper Bars 3.36 Dropper Bars 5.60 Ulifler and Landaide Iron 5.60
Lound Read Brass	Dropper Bars

ip

	HE IRON AGE
lia 3316&4 <b>4</b>	Natis. \$3.00
dis 24&10 \$dis 55 \$dis 55 \$dis 10 \$	Best Quality Refined Cost Stool
oz \$2,10 10 % los, dis 25 %	Equare, Flat, Octagon and Round.   3 C   5-16 and 35 to 4   5   16 C   5-16 and 35 to 4   5   16 C   5-16 and 35 to 6   16 C   5-16 and 35 to 6   17 C   5-16 and 35 to 6
ios. dis 25 % s, dis 3316 %	7-32 and 4/4 to 5 "
z, dis 3316 % z \$3.50 2.50 net 2.00	5-32 inch
dis 10/k5 %	A inch. 31 c Oil Well Steel Forgings 21 se No grade of Crucible Tool Steel shall be sold for less than above prices.
5.75 net	Machinery Steel. Bessemer &
.dis 20\$10 %	Ordinary Sizes, % to 2 inch Round
dia 30 %	5-16 and 214 to 3 inches 814c 70 8c
dis 50 %	7-32 inch 10\sec 90 9-16 12\sec 110 Square, Flat and Octagon, \( \frac{1}{2}\sec \) extra throughout the
dis 50 \$	list. Cut to specified lengths, % extra.
dis 70 %	Hammer Cast Steel,
	Above 2 inches
1 52% to 57 % 18 60 to 65 %	
18 45 to 50 % 1 52 6 to 57 % 18 60 to 65 % 18 40 to 45 % 147 6 to 50 % 135 to 37 6 %	Best, 2d Qual. 3d Qual. Open Hearth. To 21 gauge 13c 11c 9c 61/4c ic. extra for each additional gauge. Cut to multiples or specified lengths, 1/4c. extra.
860 on	Miscellaneous Cast Steel.
63,00 60,00 63,00 60,00 63,00	Auger and Auger Bit. 81%c Axle Steel for carriages and wagons. 85%c Frop Points and Plates. 90%c Side Bars 90%c Pick, blain. 90%c
60,00	Side Bars   Sc
	Skate Steel
	Coal and Granite Wedge
1th current	Coal and Granite Wedge
unt of 2 per com date of	Piston Rods, plain
2.50	Side Bars, plain
2.50 2.6e 2.90 2.60	Boiler, Fire-Box and Fine Sheets not less than a.c.
2.7C	thick. Boiler, Fire-Box and Flue Sheets, not less than 1/4 thick. Circulars and semi-circulars, when ordered separately.
	smoke Stack, to shape. Locomotive Tank Steel.
2.70 2.90 3.10	Locomotive Tank Steel
3.30 3.50	Square Dound Walf Dound and Man Posters of
	Inch and over
3.30	Spring Cast Steel
4.00	Tire Cost Steel
3.50	1x¼ and over
3.7c	
3.50 3.50 4.00 3.80	Fork and Rake, Crucible
4.4C	
2.76	Bessemer and Open Hearth.
2.70 2.80 3.00	Spring
3.90	Toe Calk
3 10	Sieigh Shoe
3.20 3.40 3.50	Grain Drill Bars. 85cc Points olse
3.7c	Points
4.1C 4.3C	Rolled Hammer Billets
3.30	Thrasher Steel
3.4c 3.5c	if remitted within 30 days.
3.8c 3.6c	Relis and Castings. Furnace, Floor and Straightening Plates
3.6c	Guide Plates
3.90	Pipe Mili Castings. 5 C
3.8c	Spur and Bevel Wheels, large
3.90	Pulleys up to 30 inches
4.10 4.10	heavy 45c Childed Rolls,
4.30	"6 to 7 in. diam., 7 to 20 in. long
4.30	14 to 31 in. " 72 to 108 in. ' C
4.40 4.20 4.30	White and Red Lead, Strictly Pure White Lead in Oil. in kegs, in lots of
4.50 4.50 4.60	Strictly Pure White Lead in Oll, in kegs, in lots of 500 B and over, 9c; less than 500 B, 94c in 2c and 50 B Tin Palls, 19c B to ver keg price; 1236 B Tin Palls, 10c B over keg price; assorted, 1 to 5 B, 100 B Casse, 12c.
40 4.50 4.60	Dry White Lead, less than soo lbs. 80(n cover con lbs 81/0
4.70 4.70	Red Lead, very brilliant, "Se; "714c
4.9C	Freights equalized with all points. Terms: Note at sixty days, or if paid within 15 days from date of invoice, a discount of 1½ per cent. will be allowed, but not otherwise.
4.70 4.80 4.90	be allowed, but not otherwise.  Window Ginsa.
5.1c	For Box of 50 Feet.—Discount 50&10 % on single strength, 60&10 % on double.
4.90 4.16	Single Strength.
to Cotton	5ize. AA. A. B. C. 6x 8 to 10 x 15 88.25 87.50 87.00 86.50
ach gauge	6 x 8 to 10 x 15.     88.24     87.50     87.00     86.50       11 x 14 to 16 x 24     9.24     8.50     8.00     7.25       18 x 22 to 20 x 30     10.74     9.75     8.71     7.75       15 x 36 to 24 x 30     12.25     10.75     9.00     8.00     8.00
ing floops	0 X 8 10 10 X 15, 88.3 c 87.50 87.50 86.50 11 X 14 6 10 15 X 24 9.3 c 8.50 8.00 7.3 c 18 X 22 10 20 X 30.0 16.7 c 9.7 c 8.7 c 7.7 c 7.7 c 18 X 22 10 20 X 30.0 16.7 c 9.7 c 8.7 c 7.7 c 20 X 28 10 24 X 30.0 16.3 c 13.25 10.7 c 9.00 8.6 c 20 X 38 10 24 X 30.0 16.3 c 11.50 9.7 c 9.00 8.6 c 20 X 38 10 20 X 24 10.0 c 11.5 c 10.7 c 9.0 c 20 X 38 10 20 X 24 10.0 20 X 24 10.0 c 11.2 c 10.5 c 9.0 c 20 X 24 10.0 20 X 24 10.0 c 11.2 c 10.5 c 9.0 c 20 X 24 10.0 20 X 24 10.0 c 11.2 c 10.5 c 9.0 c 20 X 24 10.0 c 10.0 c 14.0 c 11.2 c 10.5 c 9.0 c 20 X 24 10.0 c
	26 X 40 to 30 X 50
3.50 3.60	30 X 55 to 34 X 55
g Iron.	
1.100	18 X 28 to 30 X 90 17.25 14.00
3.30 3.50 3.60	26 X 26 to 26 X 44
	30 X 52 tO 30 X 54
Juniata. 6.50 6.80	36 x 60 to 40 x 60 33,25 30.00 27.75
7.10 7.30 7.50	An additional 10 per cent, will be charged for all glass more than 40 inches wide. All sizes above 52 inches in length and not making more than 81 united inches, will be charged in the 84 united inches bracket.
thes wide,	
то%е	Durhamville Glass Works
150 150	FOY 4 00
2716 %; ad	FOX & COMPANY,  Manufacturers of
3.50	SUPERIOR AMERICAN

# BOLTS. Every Bolt made from the best of Norway Iron. Cups placed on quickly. Rusty Bolts can be removed with-outinjury. Broad, flat head, which gives smooth belt sur-face.

SUPERIOR AMERICAN

WINDOW CLASS, Single and Double Thick. DURHAMVILLE, N. Y.

Established 181?.

In lots to suit buyers, at lowest market rates. Price lists, estimates, &c., on application.

Keystone Screw Co.

Manufacturer of

17th and Venango Streets,

J. BILLERBECK,

Iron Gimlet-Pointed Wood Screws

PHILADELPHIA.

# LOAM CASTINGS

Guy C. Hotchkiss, Field & Co., 624 to 642 East Fourteenth St., New York,

# IRON AND BRASS FOUNDERS

Axles, Springs, Tools, Machinery, Carriage Makers' Supplies, Fire and Dock Hydrants, Stop Cocks and Valves.

GOLD'S HEATER MANUFACTURING CO., 624 to 642 East 14th St. (between Aves. B and C), New York,

Manufacturers and Constructors of STEAM HEATING APPARATUS, Low and High Pressure, Direct and Indirect Radiation; VENTILATING APPARATUS, and the celebrated GOLD'S
PATENT HEATERS, "Hygeian." "Health," "Tubular," "Perfect."

The best Heaters in the world, furnishing a quality of heat equal to a steam apparatus, and requiring no evaporation of water to moisten the air.

Also the well-known KEYSER "PEACE-MAKER HEATERS,"

# EAGLE FACING MILLS AND PLUMBAGO WORKS. CINCINNATI, O.,

MANUFACTURERS OF

Foundry Facings and Blackings, Black Lead and Lubricating Plumbago,

Foundry Supplies, Monk's Molders' Tools, Molding Sands. Our Return Facings are used by all first-class Stove Manufacturers. Our Heavy Black-gs are used by the U. S. Government, by the leading Railroad Foundries, and wherever very castings are made.

S. OBERMAYER & CO., Prop'rs. YOUNT'S IMPROVED

ELEVATOR



Pat. Aug. 5, 1879.

Blacksmiths' Tire Upsetter. SOLD ONLY TO THE TRADE. Send for discounts.

It will upset Tire from one-quarter inch thick to a heavy log wagon Tire four inches wide and three-quarter inch thick.



INDIANAPOLIS MACHINE AND BOLT WORKS, Sole Manufacturers,

ESTABLISHED 1845.

The annexed cut shows one of the many styles of Coffee Mills of our manufacture, especially adapted to Grocers' use and all retafiers of coffee. They are highly ornamental, and workmanship of he very best. We make more than 30 styles.

ALSO LANE'S PORTABLE COFFEE ROASTER

Will roast 30 to 40 lbs. at once, and can be used as a stove at other times. Send for descriptive list to Manufacturers.

LANE BROS., Millbrook, N. Y.

Also sold by leading wholesale houses.

Our agents, Graham & Haines, 113 Chambers St., New York, carry a full line of our goods, and will be pleased to serve you at factory prices

FOR SCREEN DOORS, Try the new combination,
LATEST AND BEST, GEER'S SPRING BUTTS WITH OUR NEW BLANK BUTT.

ost effective of all Butts in the market, on a e the reverse of all others, exerting their power when the door is closed. REDUCTION IN PRICE. 





# NOTICE TO DEALERS.

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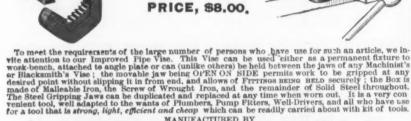
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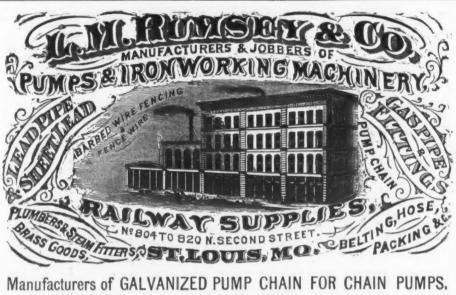
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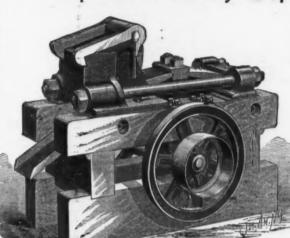
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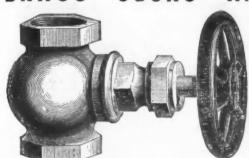


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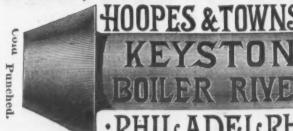
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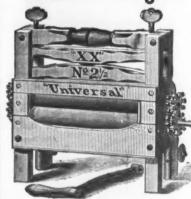
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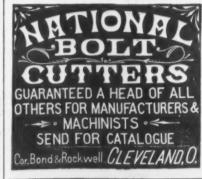


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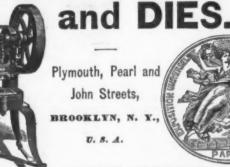
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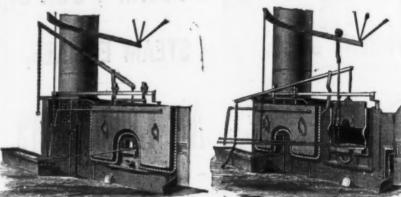


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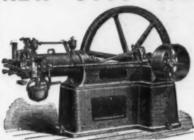


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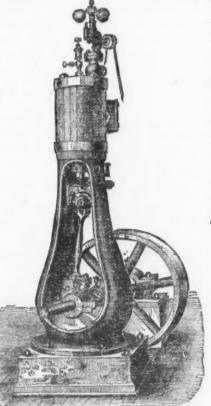


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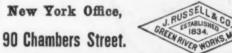
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